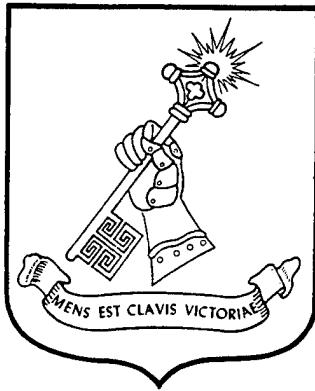


THE VII CORPS AND OPERATIONAL ART

**A MONOGRAPH
BY
Major Jerome E. Thomas
Infantry**



**School of Advanced Military Studies
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Fort Leavenworth, Kansas**

Second Term AY 97-98

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19981207 045

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE 21 May 1998	3. REPORT TYPE AND DATES COVERED Monograph	
4. TITLE AND SUBTITLE <i>The VII Corps and Operational Art</i>			5. FUNDING NUMBERS
6. AUTHOR(S) <i>MAT Jerome E. Thomas</i>			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) School of Advanced Military Studies Command and General Staff College Fort Leavenworth, Kansas 66027			8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) Command and General Staff College Fort Leavenworth, Kansas 66027			10. SPONSORING / MONITORING AGENCY REPORT NUMBER
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION / AVAILABILITY STATEMENT APPROVED FOR PUBLIC RELEASE: DISTRIBUTION UNLIMITED.			12b. DISTRIBUTION CODE
13. ABSTRACT (Maximum 200 words) SEE ATTACHED			
14. SUBJECT TERMS			15. NUMBER OF PAGES <i>56</i>
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNLIMITED

SCHOOL SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

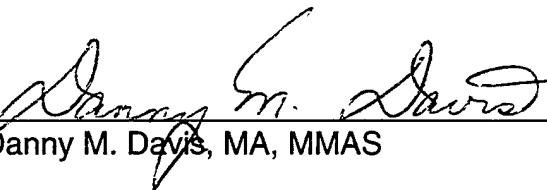
Major Jerome E. Thomas

Title of Monograph: *The VII Corps and Operational Art*

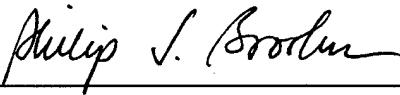
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Accepted this 21st Day of May 1998

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ABSTRACT

The VII Corps and Operational Art by MAJ Jerome E. Thomas, USA, 40 pages.

The immediate goal of this monograph is to determine what contribution VII Corps made to the evolution of operational art in Operation Desert Storm.

Saddam Hussein's invasion of Kuwait resulted in Iraq controlling much of the world's proven oil reserves which posed a serious threat to Western interests. The United States defined the political objectives, used joint warfare and decisive force in the Persian Gulf War. The United States sought a military solution consisting of using overwhelming force to protect national interests through the liberation of Kuwait. In a ground conflict that concluded in a rapid victory which lasted 100 hours, the military successfully conducted Operation Desert Storm and drove the Iraqi Army out of Kuwait. Iraq lost over half its army.

VII Corps role in Operation Desert Storm provides a good basis for examining the contribution it made to operational art. VII Corps under the command of LTG Franks had become the largest armored corps ever assembled. VII Corps was the main effort for the execution of ARCENT's ground maneuver plan. The question remains to consider what aspects of operational art were developed and extended by VII Corps operations?

This monograph pursues the answers to those questions by first defining the characteristics of operational art. The paper then looks at the implications of the strategic environment that may have influenced the VII Corps operations in Desert Storm. Next, we look closely at VII Corps and overlay the planning and execution of their operations upon the characteristics of operational art to reach the papers conclusions. The results show that the operational environment will become more and more difficult to operate in. Planners must successfully use the assets they have available to prevail.

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Chapter 1 - Introduction

The purpose of this paper is to examine the degree to which VII Corps contributed to the evolution of operational art during Operation Desert Storm. Saddam Hussein's invasion of Kuwait resulted in Iraq controlling much of the world's proven oil reserves. This posed a serious threat to Western interests.¹ The United States defined its political objectives, used joint warfare and decisive force in the Persian Gulf War. The United States sought a military solution consisting of the use of overwhelming force to protect its national interests. In a ground conflict that concluded in a rapid victory lasting 100 hours, the military successfully implemented Operation Desert Storm and drove the Iraqi Army out of Kuwait. As a consequence, Iraq lost over half its army.²

The role of VII Corps in Operation Desert Storm provides a good basis for examining the nature of operational art as exemplified by the liberation of Kuwait. The VII Corps under the command of LTG Frederick Franks had become the largest U.S. armored corps ever assembled. VII Corps was the main effort for the execution of ARCENT's ground maneuver plan.³ During the Gulf War, LTG Franks launched a powerful offensive to flank the enemy defenses. VII Corps planned to defeat a numerically superior enemy, although better equipment and technology made the coalition's combat power much greater than Iraq's.⁴ Eventually, the Iraqi Army retreated from Kuwait.

This monograph attempts to examine the nature of operational art employed by VII Corps in the Persian Gulf War. The paper is organized into four parts. Chapters 2, 3 and 4 provide the background and the tools for the remainder of the paper. Chapter 5 consists of the body of the paper and provides a discussion and analysis of VII Corps operations. Based upon the discussions in the preceding chapters, Chapter 6 concludes the monograph by discussing what contributions VII Corps made to the evolution of operational art.

Chapter 2 provides the reader with a common background on the theoretical nature of operational art. It considers joint, army, and historical references to define the terms. The chapter discusses the difference between what is meant by classic strategy and operational art.

The components of operational art are discussed using many different sources. However, the author has opted to use the eight characteristics of operational art as stated by Dr. James J. Schneider. The eight characteristics are distributed operations, the distributed campaign, continuous logistics, instantaneous command and control, operationally durable formations, operational vision, distributed enemy, and distributed deployment.⁵ The discussion of those terms will be amplified later. The eight characteristics of operational art become the criteria for determining the degree to which VII Corps contributed to the evolution of operational art. This paper focuses on the ways, ends and means of operational art. Chapter 2 provides the theoretical framework for the discussion which will occur in Chapter 5.

The intent of Chapters 3 and 4 is to provide the reader with a common framework for the operations in Desert Storm. Chapter 3 describes the strategic environment of Desert Storm. It will explain the strategic concept for the Persian Gulf War including discussions on national strategy and military objectives. Chapter 4 provides a general description of VII Corps' part in Desert Storm. The chapter ends by discussing LTG Franks' desired results in relation to the actual results achieved, and how those results influenced national strategy.

Chapter 5 provides the primary insights into the contributions VII Corps made to the evolution of operational art. Chapter 5 also analyzes the areas in which VII Corps made advancements to the practice of operational art. The components of operational art will be compared to the events involving VII Corps' execution of Operations Desert Storm and Shield to liberate Kuwait.

Based upon the observations discussed, Chapter 6 reaches conclusions concerning the nature of operational art for the future. The monograph hopes to show that VII Corps did make significant contributions to the advancement of operational art.

Chapter 2 - Operational Art

Just before Desert Storm's cease fire, General Norman Schwarzkopf stressed the significance of being schooled in operational art.⁶ The use of such terminology suggests that operational art played a central role during the Gulf War. Since the purpose of this paper is to examine the degree to which VII Corps contributed to the evolution of operational art, the term must be understood. The characteristics of operational art must be identified and then compared to VII Corps' actions in the Gulf War to actually understand the gravity of VII Corps contribution to operational art.

Let us look first at the definition of operational art. The Soviet theorist General-Major Aleksandr A. Svechin linked the strategic and tactical levels to achieve the overall military goal. He defined operational art as the link between the tactics of the battlefield and the strategic objective.⁷ This created a framework for evaluating and focusing tactical operations so that a continuous series of operations could work toward a common strategic goal. FM 100-5 defines operational art as the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization, and conduct of campaigns and major operations.⁸ This definition will form the basis of organization within this chapter. The chapter will look closely at how military forces must be employed to attain strategic goals and then how campaigns and major operations must be designed and organized. By recognizing the components of employing the military forces and the design of campaigns the reader can identify when operational art is conducted by a force.

Operational art seeks to ensure that commanders use soldiers, material, and time effectively to achieve strategic aims through campaign design. Such a design provides a framework to help the theater and operational commanders order their thoughts. Operational art helps commanders understand the conditions for victory before seeking battle, thus avoiding unnecessary battles.⁹ Without operational art, war would be a set of disconnected engagements with relative attrition the only measure of success or failure.

Classic strategy consists of the movements of opposing armies in a theater to the battlefield where the two armies agree to fight. The battle was generally decisive which meant that the campaign and the war were decided at the same time in one big fight.¹⁰ In addition, the relative lack of dispersion on the battlefield at that time meant that entire armies could fit on the same battlefield.

Svechin argued that operational art is the bridge between tactics and strategy. Operational art is the means by which the senior commander transforms a series of tactical successes into operational bounds linked together by the commander's intent and plan. It contributes to strategic success in a given theater of military actions. Operational art is the totality of maneuvers and battles in a given part of a theater of military action directed toward the achievement of the common goal.¹¹ From Svechin's statement we see that operational art is characterized by the employment of forces in deep operations. These maneuvers contain many battles within extended maneuvers with periods of inactivity. Operational art becomes the planning, execution, and sustainment of separate maneuvers and battles viewed as one whole directed toward a single purpose. The elements of operational design are objective, sequence of operations, application of resources and operational functions.¹² Those elements have been broken down just a bit further by Dr James Schneider. He has reviewed the works of many theorists and identified eight attributes of operational art: distributed operation, distributed campaign, continuous logistics, instantaneous command and control, operationally durable formations, operational vision, distributed enemy, and distributed deployment.¹³

The distributed operation is an ensemble of deep maneuvers and distributed battles extended in space and time but unified by a common aim. That common aim or purpose is to gain, retain, or deny freedom of action.¹⁴ Maneuver is typically defined as the movement of forces to achieve positional advantage over an enemy. The purpose of maneuver is to maximize the concentration of force to achieve a decisive positional advantage for the onset of battle.¹⁵ Napoleon was concerned with ensuring that battle formed an integral part of his strategic planning. Napoleon formulated four strategic principles of campaigning. The first was that every

campaign should have one clearly defined objective. Second, the main enemy force should be that objective. Third, Napoleon maintained that the army must maneuver in such a way as to place itself on the flank and rear of the enemy. Finally, Napoleon sought to strike at the lines of communications of his enemy while keeping his own heavily protected.¹⁶

Armies must also identify a common aim. The political goal of a war which guides the struggle on the armed, class, and economic fronts is determined on the basis of the interests affected by the war, the anticipated enemy resistance, the participation of unarmed forces in the conflict and one's conception of the nature of the coming war and military capabilities. The first requirement of politics with respect to strategy is to formulate the political goal of a war. Any goal should be strictly coordinated with the resources available to achieve it. The political goal should be appropriate to one's war-waging capabilities.¹⁷

The distributed campaign may consist of a single operation. However, the Soviet Theorist V. K. Triandafillov concluded the necessity for conducting successive military operations to depths of 150-200km to produce victory. To do this, the army must be much more mobile than it was as a horse drawn organization. In its fullest expression, operational art is characterized by the integration of several simultaneous and successive distributed operations in a campaign. Because modern warfare emphasizes battles and maneuver, distributed campaigns are exhaustive.¹⁸

Tukhachevsky advocated a three-step approach to achieve a breakthrough for deep operations. First, an army simultaneously neutralized the enemy's entire tactical depth, determined the weakest point, breached it, and inserted the "shock army" into the breach supported by mass artillery. The theory's second stage was the deep battle. The primary shift in theory here was selecting, in advance, the main axis that the shock army would follow. The shock army was a combined arms operational force capable of successive operations with organic forces. Stage three was deep operations. His emphasis here changed from simply developing a tactical penetration into an operational breakthrough (50-60 miles) to disrupt reserves and cut the withdrawal of the enemy main force. This type of operation called for

aviation, airborne, mechanized, and motorized formations organized to cooperate with one another, but independently from the main force. He envisioned airborne and mechanized airborne units as disruption forces in the rear to cut lines of communications and withdrawal routes. But because the Soviets were not considered well trained or capable of executing complex operations, Tukhachevsky minimized Soviet weaknesses by using its strengths of mass and simplicity to achieve the actions he thought necessary to win the next war.¹⁹

Logistics is virtually anything that makes a physical contribution to combat power. It is generally concerned with the movement and sustainment of armies in the field.²⁰ Without continuous logistics, the movement tempos and the force density would evaporate. In order for a modern industrial army in a theater of operations to maintain a militarily effective presence, its logistics system must be continuous.²¹ Triandafilov identified the need to study and perfect the problems of supply with such large operations which would become increasingly critical for mechanized armies. He noted that mechanized logistics is a requirement for future armies to succeed, and it is three times more economical than horse transport.²² The US Army's logistic forces facilitates the commander's ability to generate combat power at the decisive time and place. Logistical elements do this by: arming, fueling, fixing, moving, sustaining, and protecting the operational maneuver elements.²³

War previously was fought with the commander able visually to see his entire army deployed on the battlefield. He could easily lead, make his presence felt and control his forces by sending orders directly to subordinate commanders. But as the battlefield increased to fill up theaters of operations and even larger distances developed between the commander and his forces, battle command becomes much more difficult. Battle command is the art of battle decision making, leading, and motivating soldiers and their organizations into action to accomplish missions. It includes visualizing the current state and future state, then formulating concepts of operations to get from one to the other at least cost. Battle command also includes assigning missions, prioritizing and allocating resources, selecting the critical times and places to act, and knowing how and when to make adjustments during the fight.²⁴

For the commander to control his forces so that he can exercise proper battle command, he must mass effects at the appropriate time and place. The commander needs to have instantaneous communications. The distributed deployment of forces creates a greater variety of unexpected or unanticipated tactical and operational possibilities. As a result, this variety generates greater information. Since information is the basis of decision, the operational commander is confronted with many more decisions than his classical predecessor. The operational commander thus requires an instantaneous means of communication in order to adjust his distributed forces in rapid counteraction to the unexpected actions of the enemy.²⁵

Operationally durable formations are organizations capable of conducting a succession of distributed operations indefinitely. Improved logistical means such as the railroad, command and control, and army organizations such as the corps, enabled forces to achieve the means to conduct distributed operations. The primary tools of the operational artist are the forces themselves. Command, control, communications, and information provide cohesion and substance to the forces that receive their shape and structure from organization. Logistics provides the military artist with the operational substance for use in war. In the movement of his forces the operational artist uses his forces with bold and flashing strokes of maneuver.²⁶

Operational artists have the ability to look at a particular circumstance, comprehend the information that is available, however obscure, and are able to discern an accurate picture of the current situation. The commander's assessment of the situation is a critical step in the process of creating a vision for war fighting and articulating his intent in his campaign plan. The capability within the theater of operations is incredible. The commander has near instantaneous communications with nearly any person on the battlefield. By being able quickly to see through the fog and friction of the battlefield, the commander can improve the optempo of his forces by making quick and informed decisions. In effect, the commander with operational vision enables his forces to take the initiative and have the enemy react to him.²⁷

Operational art requires broad vision, the ability to anticipate, a careful understanding of the relationship of means to ends, an understanding of the inherent risks that are involved, and

effective joint and combined cooperation. It challenges the commander to determine the military conditions that will achieve the strategic objectives in the theater of war or theater of operations; the sequence of actions most likely to produce these conditions; and the method the commander needs when applying the appropriate military resources within established limitations to accomplish those actions. Operational art requires the theater and operational commanders to consider the ends they must achieve, the ways to achieve those ends, and how to use the means available. The commander articulates a vision for war fighting, a statement of his intent in his campaign plan, and a command structure within which he will execute that plan.²⁸

For operational art to be employed, the enemy must also be operationally minded. He must be similarly trained, armed, equipped, structured and commanded as the friendly force. The operational artist must fight a symmetrically opposed type of enemy.²⁹

Operational art also contains distributed deployment. War is no longer the massing of ground forces on a field and marching toward each other to determine the last standing person and claim victory after a relatively short fight. The totality of war is upon us in terms of increases in space and time. Whole nations mobilize to conduct war. Countries orient politics, economy, people, create an industrial base, develop technology, train and develop their own armed services and allies toward the war effort. Because of the magnitude of effort nations go through to fight a war, the enemy's mobilizing efforts must also be neutralized to win the war. Deployment patterns and force posture must increasingly account for the defense of key resource and industrial areas. Nations must sustain a continuous mobilization to support the war effort and destroy the enemy's efforts.³⁰

These eight aforementioned characteristics will be used to determine the nature of operational art expressed by VII Corps during the Gulf War. Additionally, we will examine VII Corps contribution to the evolution of operational art with the same characteristics. Chapter Three will describe the strategic environment of Desert Storm. It will provide insights to the strategic concept for the Persian Gulf War. When reading the next chapter, look closely at

how national strategy and military objectives influence the distributed campaign, operational vision, and distributed deployment. With this in mind, the reader can begin to synthesize the material presented in preparation for the discussion of those points in Chapter 5.

Chapter 3 - Strategic Environment

The goal of this chapter is to show how the United States employed its forces and applied economic and political measures to influence the outcome of the Persian Gulf War. This chapter is divided into four parts. The first part is the introduction which provides the reader with America's national security objectives and a definition of strategy. The second describes the economic, political and military relationships prior to the Iraqi Invasion into Kuwait. The third portion shows how the economic, political and military strategies influenced Desert Storm and Desert Shield. Finally, a discussion of the achievement of those objectives is at the end of the chapter.

Strategy is the art and science of employing the armed forces and other elements of state power during peace, conflict, and war to secure national security objectives.³¹ The elements of national power include economic, political, and armed measures. The United States national security objectives are to protect our nation's security, our people, our territory, and our way of life. The National Security Strategy provides us with three central goals: (1) To sustain our security with military forces that are ready to fight; (2) to bolster America's economic revitalization; (3) to promote democracy abroad. The administration is also committed to explaining our security interests and objectives to the nation; to seeking the broadest possible public and congressional support for our security programs and investments; and to exerting our leadership in the world in a manner that reflects our best national values and protects the security of this nation.³²

Considering the United States security position, let us look at what may have caused the Gulf War. Iraq was nearly \$90 billion in debt after the Iran - Iraq war. Saddam Hussein had an army over one million men and no longer feared Iran as an enemy. Saddam blamed Kuwait and the United Arab Emirates (UAE) for preventing Iraq from working its way out of this financial crisis. Kuwait hurt Iraq economically by breaking the oil quotas set by OPEC, Organization of

Petroleum Exporting Countries, which resulted in driving prices down and reducing Iraq's income.³³

During the third week in July 1990, the Iraqis deployed three divisions, consisting of about thirty-five thousand men, near Kuwait's border. These divisions included the Republican Guard, Saddam Hussein's elite troops, who were equipped with hundreds of modern Soviet-made T-72 tanks. But world opinion, to include American opinion, had little reaction to this move. The US had previously supported Iraq to a limited extent during the Iran-Iraq War. Arab leaders kept telling the United States not to worry; Arab brothers did not war against each other. The position of the United States was somewhat similar: The Bush administration seemed intent on keeping out of inter-Arab squabbles. Five days earlier, the US ambassador to Iraq, April Glaspie, told Saddam Hussein, "We have no opinion on the Arab-Arab conflicts like your border disagreement with Kuwait and if anything did happen, it was not our concern." In a subsequent message, President Bush cabled Saddam that his administration still desired better relations with Iraq. Iraq's buildup of forces along the Kuwait border did not concern other Arab countries in the region because they believed Arabs did not fight each other. Arab states publicly stated that nothing was going to happen.³⁴ This may have been a "green light" for Iraq's invasion into Kuwait.

Like the political, the military spectrum was also complicated. The military believed that national interests and national security could become a serious issue if Iraq decided to invade Kuwait. The military was preparing itself to intervene because of the possible threat to national security. The military leadership believed that the Iraqis would conduct a limited attack of the border oil fields. They did not believe Iraq would attempt to capture the entire country.³⁵

However, the political climate quickly changed after Iraq invaded Kuwait. The UN took a stand: The UN Security Council had voted 14-0 to condemn the invasion and demanded immediate and unconditional Iraqi withdrawal from Kuwait. But these votes were only verbal and not backed by any punishment.³⁶ Also, the United States position changed. It was a breach of national security on two fronts. First of all, Kuwait was an ally and a potential democratic

country. Secondly, the loss of Kuwait's oil reserves was a tremendous blow to the world. As a result, the Iraqi takeover of Kuwait impacted US economic revitalization. President Bush began implementing political and economic pressure on Iraq to force a withdrawal from Kuwait. The military was doing some initial planning but had not been given an order to begin its execution for deploying to the region.

The Iraqi attack was quickly becoming a real threat to global security. When the Iraqis were in Kuwait and within a mile of the Saudi border, Saddam owned twenty percent of the world's known oil reserves. If he went further and seized Saudi Arabia he would have 40% of the world's oil reserves. He would also have easy access to the sea from Kuwaiti ports. Jordan and Yemen could possibly tilt toward him, and he would be in a position to influence his neighbors and other countries around the world. Saddam Hussein would be the preeminent figure in the Persian Gulf.³⁷ Under the most extreme scenario, it was possible that Israel would declare war on Iraq.

But how was the administration going to resolve the threat to national and international security? Larry Eagleburger, Deputy Secretary of State, recommended that the United States ought to seek a Chapter 7 decree from the UN authorizing military force and economic sanctions. Economic sanctions had already been imposed but not the use of force. Although a course of action to resolve the threat to global security had not been decided upon yet, the United States wanted to ensure the international community would support its actions.

Although world opinion did not believe a political solution could be found, the principle Arab leaders thought differently. President Mubarak of Egypt, King Hussein of Jordan, and King Fahd of Saudi Arabia still believed that they could find an Arab solution to the Iraqi invasion of Kuwait.³⁸ Nonetheless, the United States was determined to protect its national security by first deterring a possible Iraqi invasion of Saudi Arabia. On 6 August 1990, Dick Cheney left King Fahd and got Fahd's approval to put forces into Saudi Arabia. After the political requirements were achieved, the military began a strategy for achieving its own objectives that would prevent the threats to national security.³⁹

The initial United States' military mission was two fold: to deter the Iraqis from attacking into Saudi Arabia and then, as the build up continues, to defend Saudi Arabia. By September 1990 the deterrent buildup would be complete. As troops and equipment kept pouring in, the deterrent phase would move to the defensive phase starting in early September. By about December 5, 184,000 troops would be in Saudi Arabia and the defensive phase would be complete. The military could adequately defend the country by then.

This decision to use military force had national consequences: Such a large force required the use of reserves and some mobilization of industry. It was a major political decision. The President needed to provide adequate assets for the military to conduct its mission. President Bush activated the CRAF, the Civilian Reserve Air Fleet, which meant diverting commercial aircraft to military use.⁴⁰

The UN also had begun economic sanctions. The UN Security Council had unanimously voted a trade embargo against Iraq. Thus far, political, economic and military methods were being used to protect America's security interests as well as global interests.

The military would attain its objectives by beginning with the air war: The plan was called "Instant Thunder." COL John Warden proposed that the US attack deep inside Iraq, knock out Iraqi command and control installations, transportation systems, production and storage facilities, and air defense networks. The plan prevented the Iraqis from attacking into Saudi Arabia; however, the Joint Chiefs of Staff also wanted a contingency air plan to help drive Saddam out of Kuwait.⁴¹

Many political issues continued to crop up throughout the Gulf War which could have had a significant impact on the military as it carried out its strategy. The most important was the inability of Arabs and Israelis to fight together. Other political squabbles had to be worked out for US soldiers to perform adequately their mission in Saudi Arabia.⁴²

The media also played an important role throughout the war. It helped shape national and world opinion. The US had not only to worry about the opinion of its own population but that of the world. The military also used the media to help shape world opinion in its favor. The

military instituted a selection process that determined who would speak to the media. It was critical that the US military was portrayed positively, accurately, and justly to the country and to the world.⁴³

The US political machine enabled the military to succeed by creating a formidable force and shape world opinion for the conflict. The British arrived first; then the Gulf States committed forces, along with France, Canada, Italy, Egypt, Syria, and others. Eventually thirty-five nations provided 200,000 soldiers, armaments, or money.

All elements within the chain of command were needed to keep the coalition together. The President conferred with other prime ministers, presidents, and world leaders. The Chairman, JCS discussed issues with senior military officials within the coalition and among potential members. CINC CENTCOM, GEN Schwarzkopf, focused on keeping the coalition together once they arrived in country. Because of the complexity of the politics of keeping the coalition together, the President was growing impatient with the sanctions.⁴⁴

US strategy had a timeline because of constitutional requirements that limited soldiers staying overseas longer than 6 months. The President had two basic options available: to attack or to continue sanctions. The first was an offensive option. This included mobilizing more forces and conducting a protracted air war. The Chairman of the Joint Chiefs of Staff recommended that continued preparations for a full-scale air, land, and sea campaign should continue. A land campaign could be ready in January.

The second option consisted of sanctions. The US could maintain their defensive posture in Saudi Arabia while keeping sanctions in place. Even if the U.S. built up to an offensive force, it could always execute a defensive-level strategy. Although President Bush did not think sanctions would be effective, he could deter Iraq from further aggression by having a sufficient force in Saudi Arabia to defend the country. Then by enforcing political and economic sanctions over time, President Bush could force the Iraqis to withdraw from Kuwait.⁴⁵

The United States wanted to drive the Iraqis from Kuwait but the military was constrained in that it needed more troops. The military could deter the Iraqis from attacking Saudi Arabia and

defend Saudi Arabia but did not have the offensive capability to attack. Once again the President needed to use politics to get more troops so that the military and political objectives could be achieved to keep American interests secure.⁴⁶

Politically there were two options: attack Iraq alone without any allies or attempt to get a UN resolution authorizing the use of force. Through a UN resolution there remained another difficulty: keeping the Israelis out of the conflict. The other Arab nations simply would not fight alongside them.

The military strategy changed to support the political objectives, thus adding a third phase. The first two remained the same: to deter the Iraqis from attacking into Saudi Arabia and then, as the build up continued, to defend Saudi Arabia. The third phase included driving Iraq from Kuwait. But to do so, the military needed another 200,000 soldiers which significantly affected the civilian population and industry at home. Iraq was the fourth-largest military power in the world. Saddam's forces deployed in and around Kuwait numbered over 450,000 men, 3,800 tanks, and 2,500 artillery pieces; in addition, he had announced his intention to send another 250,000 troops. Saddam also had a significant biological and chemical arsenal.

Nevertheless, the US still wanted world wide support for military operations against Iraq. On 29 Nov 1990, the United Nations voted to sanction military forces to drive Iraq from Kuwait. Resolution 678 passed the Security Council 12-2 with Cuba and Yemen voting no and China abstaining.⁴⁷

Political support provided the requirements for the military to succeed. At the same time the military provided much of the means toward achieving the national security strategy goals. By the time Resolution 678 was passed, a remarkable coalition had been welded together mostly over the phone from the Oval Office. But the UN resolution also limited the objective to driving Iraq from Kuwait. The United States could not use the coalition under the United Nations resolution to attack into Iraq and destroy all of their forces as well. Thirty-five nations were providing manpower, armaments or money. 200,000 coalition troops would be deployed

alongside the Americans to liberate Kuwait. By accomplishing the UN objectives, those nations would also be protecting US interests.

Worldwide objectives in the UN resolution made it clear that the mission was only to free Kuwait. This UN resolution defined the world objectives but that also meant it constrained the United States political and military objectives and thereby affected its strategy. But the UN objectives were actually contributing toward the accomplishment of the requirements to meet US security interests in the region. For the previous ten years, Iran, not Iraq, had been America's Persian Gulf nemesis. The intent was to have Iraq as a threat and counterweight to Iran. Regionally, Saudi Arabia did not want a Shiite regime breaking off from Iraq in the south. The Turks did not want a Kurdish regime splitting off from Iraq in the north.⁴⁸ The UN had given the United States an objective, and the President intended to accomplish it.

To begin military operations the President needed to satisfy Congress that all measures had been taken to comply with the twelve UN resolutions before going to war. On 15 Jan 1991, the President stated that Iraqi had failed to meet the resolutions and would make the determination to go to war by Section 2 (B), House Joint Resolution 77. Then on 17 Jan 1991 at 0500, the air war successfully began.⁴⁹

The military strategy to drive Iraq from Kuwait was to begin with an air campaign. The ground plan would begin by frontal attacks in the center and the east to fix the opposing Iraqi Army and then conduct an envelopment from the west to cut off the Iraqis from the rear. The President supported the ground plan but needed to determine how to support it politically. He decided to deliver an ultimatum to Iraq on 1 Feb 1991.

Iraq realized that Scuds missiles were political weapons and used them to affect the coalition by striking targets in Israel which was not fighting in the war. When Scuds began to fall on Tel Aviv and Haifa, the Israelis instinctively wanted to lash back. No Israeli government could be seen failing to protect its people from an Arab attack. Nevertheless, the United States needed to keep the Israelis out of the fight to preserve the coalition. The Scud, which was a poor military weapon, was proving to be a useful political weapon for the Iraqis. Such a political

concern also shaped military strategy. General Schwarzkopf began diverting more and more of his combat aircraft to Scud-busting (as many as a third of all missions flown). British and US special operations troops slipped behind enemy lines to search out Scuds as well. American patriot missile units were sent to help protect major Israeli cities. Although the scuds may have not been the number one target their importance in keeping the coalition together influenced its importance as a target.⁵⁰

The world political climate continued to influence the United States political and military strategy. The Iraqis played another political card in addition to their use of scuds. They were going to seek the help of an old ally, the former Soviet Union. The Iraqis wanted Mikhail Gorbechev to play peacemaker. Iraq wanted a commitment from the Soviets showing that if the Iraqis withdrew from Kuwait, hostilities would end. This put President Bush in a political bind. He did not want to win by a TKO that would allow Saddam to withdraw with his army unpunished and intact to fight another day. Nevertheless, the President could not be seen as turning his back on a chance for peace. The US solution was to put a deadline on Gorbechev's proposal. If the Iraqis did not withdraw by 15 February, the United States would drive them from Kuwait militarily.⁵¹

After the ground war began, world opinion played a significant role in the way the war ended. The United States was so successful in capturing Iraqi prisoners and destroying their equipment it began to look like a slaughter. The United States Army destroyed Iraqi forces so well that the major road out of Kuwait to Iraq was called the "Highway of Death." This name came across as a warning to the US leadership. America did not want to be perceived as killing for killing's sake. It did not want to lose what it considered a righteous attack on Iraq to liberate Kuwait. World opinion also had a part in choosing the day of surrender. American leadership remembered that the Arab-Israeli war lasted six days. If Desert Storm ended at 100 hours, it would be one day better than what was accomplished in history. Also, the war would be easily remembered by making it a 100-hour war.⁵²

Also, military concerns helped drive the decision to end the war even though all political objectives had been met. The commander on the ground, General Schwarzkopf, wanted more time to check the battlefield and clean up any loose ends.⁵³ So even though the political and military objectives had been met, military reasons caused the war to continue a bit longer. The United States had achieved its political objective mandated by the UN resolution to liberate Kuwait. At 5:57 PM, the President made the decision to suspend hostilities.⁵⁴

What tends to be forgotten is that while the United States led the way, it headed an international coalition carrying out a clearly defined UN mission. That mission was accomplished. President Bush had promised the American people that Desert Storm would not become a Persian Gulf Vietnam, and he kept his promise.

From the geopolitical standpoint, the coalition, particularly the Arab states, never wanted Iraq invaded and dismembered. According to Charles Freeman, the US ambassador to Saudi Arabia, "For a range of reasons we cannot pursue Iraq's unconditional surrender and occupation by us. It is not in our interest to destroy Iraq or weaken it to the point that Iran and/or Syria are not constrained by it." Attacking into Iraq would not contribute to the stability the United States wanted in the Middle East. It would have fragmented Iraq into separate Sunni, Shia, and Kurd political entities.⁵⁵ The President's demonizing of Saddam as the devil incarnate did not help the public understand why he was allowed to stay in power. It is naïve to think that if Saddam had fallen, he would have been replaced by someone who wanted a democratic form of government.

Not only did Desert Storm accomplish its political objective, it started to reverse the climate of chronic hostility in the Middle East. King Hussein of Jordan and Yasser Arafat, Chairman of the PLO, were the only two major Arab leaders who showed any support for Iraq during the Gulf War, and both were weakened by their stance. As a result, three years later, they were still trying to reach accommodations with Israel and their other neighbors. The Madrid Middle East Peace Conference, following Desert Storm, started the process that resulted in the historic agreement between Arafat and Israeli Prime Minister Rabin in September 1993 and the

peace treaty between King Hussein and Israel in October 1994.⁵⁶ Because of Desert Storm and maintaining close ties with many members of the coalition, the United States enjoys unprecedented access to the region today which was denied before the Gulf War.

Chapter 4 - VII Corps Role

Chapter 4 will first look at Third Army's, VII Corps' higher headquarters, concept for executing the ground war. We will then examine the VII Corps plan and consider how the ground war was actually conducted. This chapter will be analyzed in the context of the eight characteristics of operational art discussed in Chapter 2. Those comparisons will be discussed in Chapter 5.

On 25 September 1990, Third Army developed a set of operational considerations for executing the ground war. First was the principle that CENTCOM forces should seek to fight only a minimum number of enemy formations; they would bypass others. The second was that the air offensive would have to reduce enemy forces about 50% if acceptable friendly-to-enemy force ratios were to be realized prior to beginning any ground attack. This made the acceptability of ground offensive operations explicitly dependent on the success of air operations in the Kuwaiti Theater of Operations (KTO). Third, given the nature of mechanized trafficability in the theater, it was apparent that rapid intelligence acquisition reporting and targeting would be essential to success. Finally, the whole issue of sustainability became an early and long-lived concern.

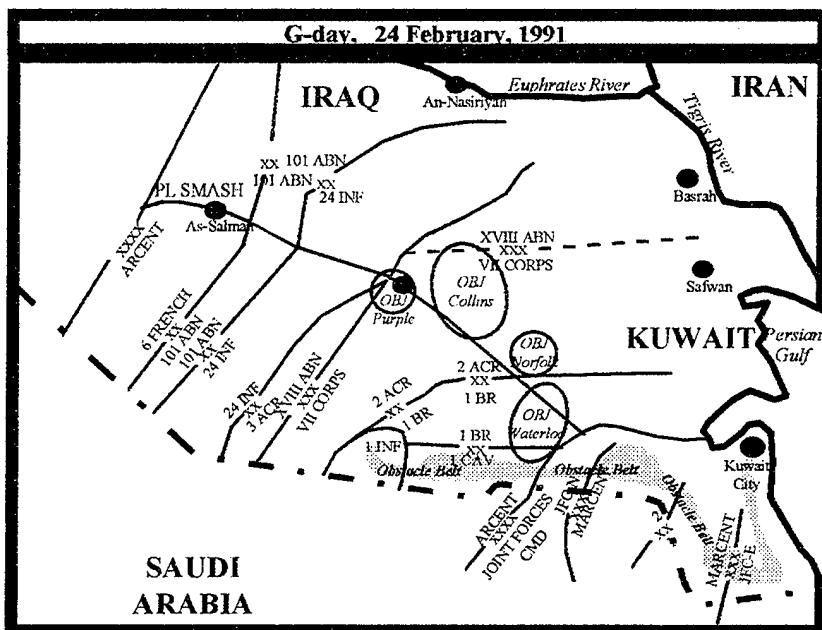
Operational reach of mechanized ground forces is gained by wheeled vehicles. The army which had been designed for defensive war in Europe was short of wheeled vehicles in general and heavy equipment transporters (HETs) in particular. It was also short of line-haul fuel trucks, especially fuel trucks capable of long-distance off-road movement. Fuel trucks make it possible to keep the armored columns moving forward in the attack. HETs provide the ability to concentrate armored forces operationally without undue wear and tear on tracks and power trains. These shortages of wheeled vehicles had been aggravated by decisions having to do with achieving minimum essential forces for the Desert Shield deployment. A great deal would depend upon the ability of the host nation and allied nations to make up the deficit in all categories.⁵⁷

The plan was to move the entire VII Corps from its Cold War stations in Germany and double the number of aircraft to the Persian Gulf area to give the Allies an offensive combat option. This meant that all of Europe was to become a line of communications for the Persian Gulf operation. In mid-December, the Third Army plan concept called for a two-corps attack on a broad front that would block the Iraqi routes of escape and destroy the Republican Guard Forces Command (RGFC). The air force component was responsible for isolating the theater of operations south of the Euphrates River by keeping bridges down. The army commander's intent was to penetrate and envelop the defensive forces, fix and block forward-deployed heavy forces in order to secure the flanks and lines of communication, and continue the attack deep to destroy the Republican Guard.

But the plan was to begin with a deception. VII Corps was not to move to its attack position until the air war began. The air force was to destroy the Iraqi aircraft and make the enemy virtually blind. Without "eyes", Iraq would not notice VII Corps move to the west just outside the Iraqi obstacle belt. Schwarzkopf's strict guidance in support of the deception effort was that no preparations for Desert Storm were to be made west of the Wadi al Batin prior to initiation of the air campaign. Because of the distances involved in the operational redeployment and those anticipated during the offensive, it would be necessary to create two forward logistics bases (one for each corps) west of the wadi. This could not begin before D-day.

Initially, the VII Corps plan called for the entire corps to pass through a breach to be made by the 1st Infantry Division in the Iraqi defensive line. But as the corps grew familiar with the ground and identified the end of the Iraqi defenses which was located about forty kilometers from an escarpment that dominated the right flank of XVIII Corps zone. Plans for the two armored divisions and 2d Armored Cavalry Regiment (ACR) were gradually modified to move the core of the iron fist around the end of the Iraqi positions but still east of the escarpment. A simulation was conducted by BCTP and LTG Franks revised the plan after consulting with his commanders and staff. While VII Corps' mission was oriented toward force rather than terrain, it was assigned a zone within which to maneuver. The new plan called for a maneuver around the

enemy defenses by the 1st and 3d Armored Divisions (behind the 2d ACR), with only the 1st UK Armored Division following the 1st Infantry Division through the breach. The end run was to be a tight squeeze. It required the 3d Armored Division to move in a column of brigades with a fifteen-kilometer front. The 1st Armored Division, with a frontage of twenty-five kilometers on its left was only marginally better off, but this maneuver avoided the necessity of passing successive divisions deployed in column through an obstacle belt.



The other key operational issue was the likely ratio of opposition to friendly forces. The air force had a requirement to reduce the Iraqi ground forces by 50%. Given this assumption, VII Corps would have an advantage of 11.5:1 at the reach site, 3.8:1 enroute to the Republican Guard, and 2:1 at the decisive point. These figures are important because the overall force ratio expected in the VII Corps sector (counting friendly and enemy brigades as roughly equivalent) was assumed to be no better than 1.3:1, far below any acceptable theoretical rule of thumb. Although these calculations may have been worst case, the VII Corps planners, leaders, and fighters believed them at the time. Those who would actually be called upon to lead ground forces into battle would naturally be far less optimistic about the effect of the air campaign on enemy capabilities than those not in the fight.⁵⁸

Schwarzkopf had challenged his VII Corps plan on two main points. The first was his belief that VII Corps was greatly overestimating the practical strength of the Iraqis, particularly following the anticipated 50% attrition of them by the air interdiction program. Finally, Schwarzkopf was extremely discomfited by the idea that, as the plan was presented to him, VII Corps intended to observe an operational pause. He understood that once VII Corps fought through to the enemy tactical depths, the corps was stopping to rearm and refuel in the vicinity of Objective Collins.⁵⁹

The logistical problems did not go away, especially the question concerning fuel. The question boiled down to how much of the force would stop, at any time, to refuel and rearm before getting on with the war. Could refueling be accommodated by rippling it along the front a brigade at a time? Because large units, divisions and corps, rarely exercise as complete units in the field, the problem of refueling a division, much less a corps on the move, is seldom confronted. Moreover, refueling in an offensive posture is harder to accomplish because of the need to carry fuel forward to the moving forces rather than being able to preposition it along the way. VII Corps referred to a pause as time to refuel while CENTCOM thought a pause was a temporary halt of operations. It seems apparent that the term "pause" had different connotations for different officers depending on their immediate concerns. Also further discussion of the tactical pauses seemed to only sow further confusion.⁶⁰

General Franks argued consistently for what he believed were three essentials for success: (1) relentless attack (no pauses once the operation was under way); (2) maintenance of concentration--hitting with a closed fist rather than open fingers; and (3) the absolute need for three heavy divisions at the point of impact with the RGFC.

The need for concentration meant a tightly controlled advance of a corps attack that moved deliberately in a particular sequence. The fist, the 1st and 3d Armored Divisions and the 2d Armored Cavalry Regiment, would have to move under corps control just to avoid having the units separated. Intermingling units needed to be avoided not only to maintain concentration but also to avoid fratricide. The rate of march, like that of a fleet at sea (which the divisions so

closely resembled on the desert floor), could not exceed the speed of the slowest vehicle. Moreover, the whole body could not get so far ahead of the 1st UK Armored Division as to expose the "fist's" eastern flank to interruption by Iraqi tactical reserves. Since the 1st Cavalry Division (-) did not appear likely to be released in time to get into the VII Corps fight with the RGFC (as the division's release was increasingly tied to the success of the Egyptian attack), the 1st Infantry Division would have to be the third heavy division upon which the VII Corps commander believed success rested. That meant the wheeling divisions would have to retard their movement long enough for the 1st Infantry to breach the enemy line, pass the 1st UK through, then fall in on the fist's right rear.

As we transition to what actually took place, we can look at what some of the commanders were thinking. By 1 Feb, air operations were in their 16th day. Most of VII Corps had closed into the tactical assembly areas around King Khalid Military City. G-day was approaching, but the estimated attrition of the Iraqi forces in Kuwait was disappointing to the Army commanders. The destruction of enemy forces to 50% by the air force was behind schedule. This meant that the force ratio facing the VII Corps was not very favorable.⁶¹

Additionally, on 29 January 1991, the Iraqis conducted a spoiling attack at Khafji. It was conducted against the Saudi Joint Forces Command East and the US Marine forces. The defeat of this probe seems to have reinforced Schwarzkopf's confidence that the Iraqis would not be able to mount a coherent defense. If anything, Khafji had the opposite effect on VII Corps. These were men seriously intent on seeing to it that when they closed with an enemy -- whom they fully expected to fight and fight hard -- they would have every available means at hand. Concern was also expressed about the potential use of gas by the Iraqis, a capability that was taken quite seriously by all concerned, through G-day and through the four-day battle that followed.⁶²

On 9 February 1991, the Secretary of Defense and Chairman of the JCS returned to Riyadh to receive a briefing from General Schwarzkopf and his commanders on preparations for a ground offensive. General Franks mentioned his general skepticism of the advertised

effectiveness of the aerial preparation. Then, General Schwarzkopf was made aware that the initial challenge for the heavy corps would be winning the necessary maneuver room. This challenge would require squeezing two heavy divisions into a narrow opening between the Iraqi defensive line and the escarpment to the west. The challenge in the east was a deliberate breaching operation by the 1st Infantry Division. The breaching operation would be followed by a passage of lines by the 1st UK Armored Division. The British were to turn to the east and attack the Iraqi tactical reserves in order to protect the corps' flank and to relieve the pressure on the Egyptian Corps, thus freeing the theater reserve for the main attack. The British Armor Division's maneuver was essential to General Franks because it enabled VII Corps to mass the two armored divisions, a mechanized division, and an armored cavalry regiment to slam into the Republican Guard which had to be located and fixed. Then the tactical details of communications, movement, and sustainment were briefed.⁶³

The physical destruction of Iraqi armored forces became an important objective to ensure future regional stability - a strategic goal. The burden of the planned ground attack rested firmly on the VII Corps. Everything else could essentially fail, but if VII Corps succeeded in destroying the Republican Guard and the Iraqi operational reserves, the operation would still be considered a success. If VII Corps failed and the Republican Guard was able to counter attack, the offensive through the Iraqi defenses could become very bloody and maybe fail.

On 24 Feb 91, the artillery of the 1st Infantry Division would be in position to begin the VII Corps breaching operation at 1230. General Rhame wanted to begin the attack at 1300. Schwarzkopf delayed the heavy force attack until 1500 so that the Arab Islamic Joint Forces Command North could attack simultaneously with the Third Army's heavy forces. At 1430, the 1st Infantry Division fired its preparation, using the division artilleries of two divisions and three reinforcing brigades. At 1500, the breaching operations began. The "Great Wheel" was under way.

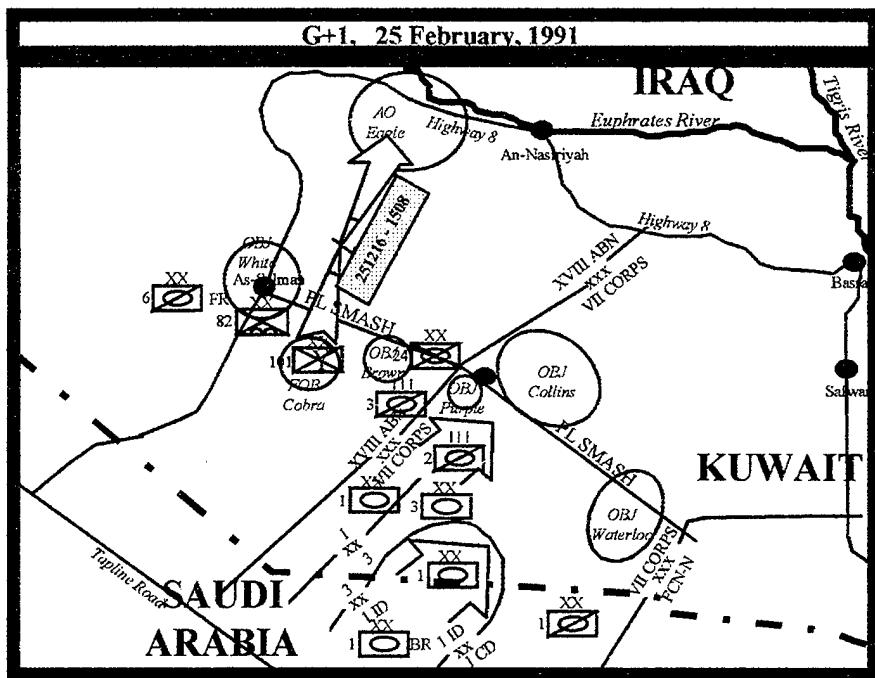
By 1600, the US 1st Infantry Division reported sixteen passage lanes cleared at the breach site. By 1654, there were 24 lanes cleared. By nightfall, the division had secured its

intermediate objective, Phase Line (PL) Colorado: two brigade semicircles that denied enemy direct fire onto the breach head line. Franks met with the commanders of his leading formations, Rhame and Holder, to discuss options for the first night. The 1st Infantry Division was now split by the enemy's defensive barriers. Its two lead brigades had cleared a number of lanes through the obstacle zone but these still had to be proofed and marked. Exits and assembly areas within the breach head still had to be organized in the dark. Almost three division equivalents would have to move through the passage points before the 1st UK Armored Division would pass through the breach to attack the Iraqi tactical reserves. MG Rhame had serious reservations about committing the 2d AD into the passage of the breach-head area and executing the attack to Phase Line New Jersey in the dark. Risks of fratricide-caused by compressing three brigades into the small area and executing a rapid attack in the dark were high. Further, the brigade's ability to conduct night operations was unknown. The leading brigades, although set on PL Colorado, were still receiving sporadic fire that would continue through the night. The consensus of the three commanders was to hold the 1st Infantry in place, set on PL Colorado, and complete the opening of the breach-head area the following morning, rather than accepting the risk of being caught disorganized by an enemy counterattack in the dark.⁶⁴

On 25 February, the Iraqis began to react to the US attack by forming a defensive line. Their defense consisted of a brigade of the RGFC Adnan Infantry Division, the RGFC Tawakalna Mechanized Division, two brigades of the 12th Armored Divisions, and two other mechanized brigades which assembled from southwest to northeast to confront the VII Corps envelopment. Although the defenders seem to have grasped what was happening operationally -- to the extent they took counteractions against it -- they lacked the means of intelligence acquisition to detect the gravity of their situation before they found themselves confronted tactically with overwhelming armored killing power.

The 1st AD began its advance at 0630 behind its own cavalry screen on a two brigade front of about 20-30 km. The division destroyed the reserve brigade of the Iraqi 26th Division between 1300-1700 and continued on to Objective Purple. It advanced 144km in sixteen hours

of maneuver and combat. Because Al Busayyah was known to be an occupied built-up area and along a critical MSR, Griffith decided to conduct a deliberate attack. He prepared the objective by artillery fire during the night of the 25th and 26th and then assaulted the next day rather than accepting the risk of heavy losses in a dismounted infantry attack in the dark.



The 2d ACR estimated that the RGFC Tawakalna Division was located along the 65 Easting with a security zone of eight miles. The corps commander, visiting the regimental tactical operations center at 1530 ordered the regiment to maintain contact and fix the RGFC, locate their flanks, and be prepared to pass the 1st Infantry Division through.

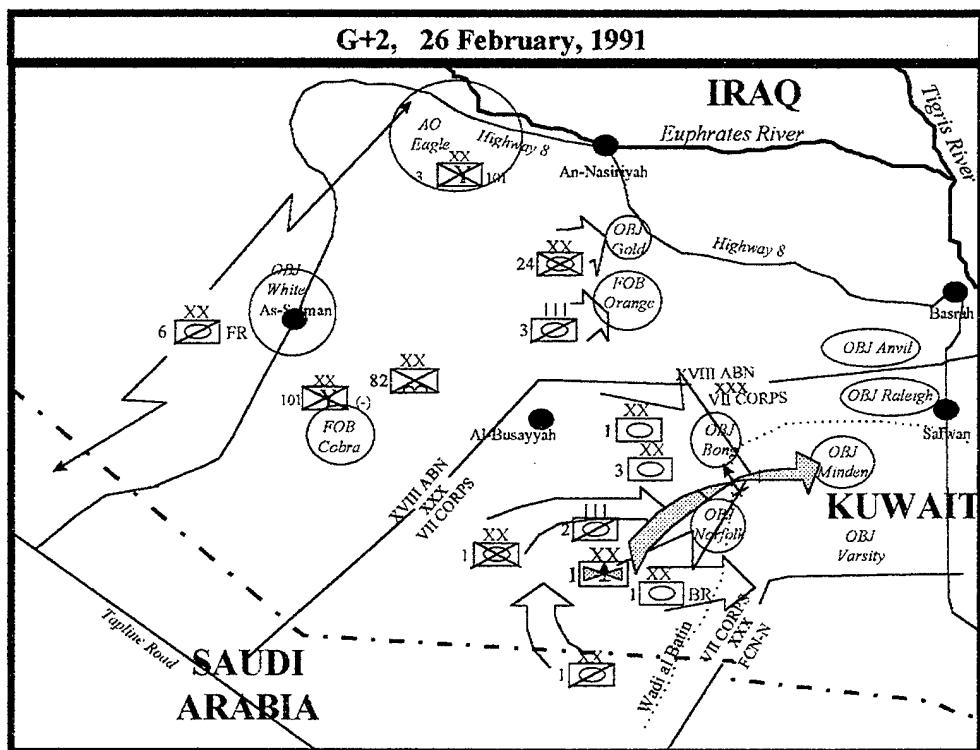
LTG Franks' intent was for the 1st AD to close with the RGFC Medina Armored Division, with the 3d AD to destroy the Tawakalna, then follow on by attacking what were believed to be the 52d and 17th Armored Divisions (which were actually the 12th and 10th Divisions). The 1st Infantry would pass through the 2d Armored Cavalry, then the corps would attack with three divisions abreast. The focus would be on the 1st and 3d Armored Divisions which were oriented against the center of gravity of the RGFC at Objective Norfolk. The 1st Infantry Division was on the far right and would become the enveloping force if an opening developed.

The 1st ID completed exploitation of its breach by 1100 on 25 February 1991. Beginning at 1200, the 1st UK Armored Division passed through the 1st ID lasting until about 0200 on the 26th. Then the 1st ID began to move north to fall in behind the 2d Cavalry Division. After dark, the 1st ID passed through the regimental line and came abreast of the 1st and 3d Armored Divisions.

LTG Franks had talked about continuing without a pause; nevertheless, by 2100 on the 25th, the 1st Armored Division and 2d Armored Cavalry Regiment had stopped for the night. The 1st AD began to prepare for a deliberate attack and the 2d ACR went into a hasty defense to allow the corps to rebalance for the decisive attack the next day. The logistical limits of the encircling forces, the US 1st Armored division actions, and increased speed on the night of the 25th would have been paid for in soldiers' blood -- a cost VII Corps seemed to have been more reluctant to pay. Schwarzkopf was upset about the VII Corps halt. He either did not share their awareness, or else it was a price he found acceptable.⁶⁵

LTG Franks had brought his three heavy divisions on line. VII Corps had completed the shifting of his offensive center of gravity to his left on the 25th in spite of the foul weather. For the most part, superior US weapons optics allowed VII Corps systems to see the enemy while remaining concealed from them. The 2d ACR and most of VII Corps advanced toward the Republican Guard through a Shamal, a mix of rain and blowing sand that can reduce visibility to next to nothing. The corps had found the Republican Guard Forces Command and began execution of the second phase of its attack plan that evening. Iraq had not committed to accepting any of the UN resolutions but beginning at 2230 on 25 Feb 91, early intelligence reports indicated that the Iraqi Army had begun a mass exodus led by the Iraqi III Corps in the east. On 26 February at 0135, Baghdad radio announced an Iraqi withdrawal from Kuwait. President Bush responded quickly announcing that Saddam's withdrawal was unsatisfactory unless Iraq accepted the various UN resolutions, payment of reparations, release of prisoners, and abandoned all claims to Kuwait.

The main attack was taking place in VII Corps. It began with the advance of the 2d Armored Cavalry Regiment and 3d Armored Division the morning of the 26th and continued almost without pause until the evening of the 27th. The 1st AD overran Objective Purple and continued east to fall in on the left flank of the 3d AD on the afternoon of the 26th. The 1st ID passed through the 2d ACR, forced through the Iraqis and broke out on the corps right center. The 1st UK continued its progress eastward and across Wadi al Batin, protecting the corps right flank and opening the way for the Joint Forces Command North to attack toward Kuwait City.



On the afternoon of 26 February 1991, the theater reserve, the 1st Cavalry Division (-) was released at H+53. Schwarzkopf's reluctance to commit his own reserve until so late in the battle makes one wonder about his aggressiveness, true thoughts, and even his vision of anticipating an Iraqi collapse across the front. At 1345, the CINC moved the ARCTN-Joint Forces Command North boundary south to provide additional maneuver room for VII Corps in

northern Kuwait. The division passed through the 1st Infantry Division's breach and raced north, arriving in time for a final attack on the 28th which never occurred.

The 1st AD would also fight the RGFC Medina Armored Divisions, a brigade of the RGFC Adnan Infantry Division, and the remnants of several regular Iraqi units. The US 3d AD would fight a brigade of the Tawakalna, the 10th Armored Division, and part of the 12th AD. The US 2d ACR would fight part of the Tawakalna Division. On the night of the 26th, the 1st infantry Division would relieve the 2d ACR and take over the destruction of the Tawakalna, the 12th AD, and parts of the 10th armored Divisions.

On the corps right, beginning at 2200 on the 26th, the 1st ID conducted an unrehearsed night passage of lines with the 2d ACR then in contact with the enemy. The 1st ID had advanced on 26 February to the Mugla Ridge, the only terrain feature astride the principal escape route from Kuwait City. The 1st ID carried on the fight with the Tawakalna's southernmost brigade and a brigade of the Iraqi 12th AD. The division drove through the enemy's rear and into the open by 0430 the morning of the 27th. The 1st ID refueled and began an exploitation by 1000 that would end that night. The 1st Infantry Division's cavalry squadron was across the Kuwait City Basrah highway and the division was positioned for an envelopment of the RGFC's southern flank. The brigade destroyed 180 tanks, 135 APC, 36 artillery pieces, and captured 4050 prisoners.

The 1st Cavalry Division went through the 1st Infantry Division breach and was behind the 1st Armored Division by the close of the 27th. By evening on the 27th, the 1st Cavalry Division was ready to relieve the 1st Armored Division. The 1st AD required an infusion of fuel from the 3d AD to maintain its advance -- logistics inhibited by the bad weather over roadless terrain, were beginning to restrict the wheeling corps. The 1st Cavalry Division had moved to the north to become part of a northern pincer in a double envelopment of the forces still outside Basrah in the VII Corps sector. The 1st Infantry Division had broken through on the corps right, and Franks was preparing for a final encirclement when the events associated with the cessation

of offensive actions intervened on the night of the 27th-28th.⁶⁶ Offensive military operations came to a halt on 28 February when President Bush called for cease-fire talks.⁶⁷

VII Corps conducted operations in Desert Storm which can be analyzed using the eight characteristics of operational art. By examining the actions of VII Corps and comparing them to each characteristic of operational art, this monograph can reach conclusions of how VII Corps contributed to the evolution of operational art. Chapter 5 will analyze the implications future planners must consider for operational planning.

Chapter 5 Analysis: VII Corps & Operational Art

Chapter 2 provided us with the characteristics of operational art: Operational vision, distributed enemy, distributed deployment, distributed campaign, distributed operations, operationally durable formations, instantaneous command and control, and continuous logistics. Chapters 3 and 4 gave us a background of the strategic setting and what actually took place within VII Corps. This chapter will take the characteristics of operational art and examine VII Corps' role in Desert Storm to determine how VII Corps contributed to operational art in each of those areas.

We will begin by looking at distributed operations. Distributed operations is the employment of operations over extended time and space with a common aim. VII Corps ensured each action was oriented toward one single purpose. From setting the conditions for the main attack and the conduct of the ground attack itself, VII Corps operations during Desert Storm extended from 350 kms east/west and 225 km north/south (nearly 80,000 square kilometers). VII Corps maneuvered over 300 kms using artillery, ATACMS, aviation, and air force assets to strike enemy assets deep prior to executing its main attack to defeat quickly the initial enemy defenses.⁶⁸ VII Corps had focused aviation and artillery assets against the Iraqi 48th Division and 52d Division directly to their front. The 48th Division had been exposed to 39 consecutive days of air attack and its artillery was defeated by the 1st ID preparation and counterbattery fires. One brigade from the 52d Division was reduced by nearly 80% to 15 tanks and 15 BMPs.⁶⁹

VII Corps divisions would fight a series of battles with many different enemy units throughout Desert Storm all over the battlefield. However, each fight was not an end in itself. Each action had one single aim and focus for the VII Corps. Each action was unified by a common aim: to destroy the RGFC and eventually close off the northern routes out of Kuwait into Iraq from Kuwait City to Basrah. VII Corps was going to destroy the RGFC by keeping its forces massed for the eventual fight with the Iraqi forces. VII Corps aim was to deny the enemy their freedom of action. The purpose of their maneuver was to achieve positional advantage

over the enemy. This also supported the political goal of liberating Kuwait and reducing Saddam's military power that could be used for future conflicts.⁷⁰ As operations continue to evolve over time, operations will be conducted over wider areas and units will be employed even further apart. More types of equipment, units, and assets will be employed during an operation. VII Corps execution of its operations show that each specific asset must be oriented toward a common objective to be successful. This becomes even more critical over time, when the many different components may not support that common objective.

The operational commander requires an instantaneous means of communication in order to adjust his distributed forces in rapid counteraction to the unexpected actions of the enemy. VII Corps had access to national assets to determine exact enemy dispositions. Although this capability was available, VII Corps was focused on accomplishing, first, its force-oriented mission of destroying the Iraqi Republican Guard. Secondly, it was to close northern access routes from Kuwait to Iraq via the Basrah highway (Highway of Death). National assets indicated that the enemy was withdrawing in masses from Kuwait to Iraq through the Basrah highway. However, VII Corps did not quickly learn that the enemy's mission had changed from a defense to a delaying action. As a result, VII Corps never really understood the importance of quickly closing the gap and switching from a deliberate attack orientation to one of pursuit. This misunderstanding contributed to the misperception between CENTCOM and 3rd Army's VII Corps.⁷¹

VII Corps had instantaneous communications with all subordinate, higher, and adjacent units. It was able to command and control its units and direct forces to take advantage of gaps and to retain the initiative. When the 2d ACR first identified and confirmed contact with the RGFC Tawakalna Division; LTG Franks ordered the 2d ACR to fix them and pass the 1st ID through to destroy them.⁷² When it saw the opportunity, VII Corps exploited. But because of limited intelligence, the Iraqis were very uncertain of the current situation that faced them and were not able to maneuver adequately their forces against the coalition. Its command and control systems were not functional at the operational level. Iraq was essentially operating as

individual elements fighting for themselves instead of operating as a whole. This was evident at several levels. Beginning at the top, the Iraqi general who came to the cease fire talks did not even realize the extent of the POWs, KIAs, WIAs taken by the US forces. An example at lower levels is illustrated by an Iraqi soldier that stated he had not had communications with higher headquarters for five days.⁷³

VII Corps showed the importance of maintaining instantaneous command and control. VII Corps progress, or current situation, was constantly being sent to the national security council enabling high level decisions, emphasis, and intent to be made nearly instantaneously. Such quick decisions allowed subordinate units' optempo to remain high because many of the uncertainties of the situations they were about to face had already been thought through and decided upon by the appropriate level of command. Also, since VII Corps dispositions were known, it allowed national-level figures, such as the President, to remain one step ahead while continually working political means to foresee and maneuver the press (decision to cease fire) and allies (call other nations about cease fire).⁷⁴ This level of instantaneous C2 was unprecedented and kept operations moving quickly and efficiently. It can be expected that the emphasis on C2 will increase dramatically for future operational art development and execution issues.

Operational art requires broad vision, the ability to anticipate, a careful understanding of the relationship of means to ends, an understanding of the inherent risks that are under them, and effective joint and combined cooperation. LTG Franks envisioned how his plan was to succeed and adhered to that vision. He wanted to mass his two armored divisions and one infantry division and slam them into the heart of the Iraqi Republican Guard. At several points during Desert Storm, the opportunity arose for him to separate his forces. For example, on the night of 24 Feb, 1st ID was split with part of its forces north of the Iraqi obstacles and some south of the obstacle belt. The 2d ACR, 1st and 3d AD were several miles north of 1st ID. LTG Franks realized it would take 1st ID longer to make it through the breach. He knew that his forces would be significantly separated and if engaged by the elite Iraqi Republican Guard Forces, VII Corps

would be fighting a very bloody battle.⁷⁵ As a result, LTG Franks opted to slow down his optempo to keep his forces massed.

Also, we observed that LTG Franks had pushed his forces on 26 Feb for over 18 hours of continuous contact with enemy forces. He had kept his forces massed and overwhelmingly defeated the Adnan, Medina, and Tawakalna Republican Guard Forces, and a host of other armored and infantry forces by maintaining his vision and taking the initiative when he saw the opportunity existed.⁷⁶ This took tremendous foresight in light of the intense pressure from Gen Schwarzkopf who was constantly pressing the attack. LTG Franks did so, but did not sacrifice his vision for success. He did not want unnecessarily to risk success and casualties when accomplishing the strategic objectives depended on his conduct of operations. A successful vision becomes extremely important in the wake of future wars. Future fights will have many more distractions. Previously, it was unheard of to have the Chairman of the Joint Chiefs of Staff and the President influence operations instantaneously. Formerly, it would have taken much longer. However, the future brings the possibility of not only the national command authority influencing operations but also politicians, other important individuals, the media, and even other nations. For future operations, it will become extremely important to focus on the vision and accomplish the mission at hand.

Operationally durable formations were evident in VII Corps' capability to conduct a succession of distributed operations indefinitely and simultaneously. VII Corps conducted a series of operations at a very high optempo. LTG Franks maintained constant communications with his divisions with an appropriate availability of enemy intelligence. He planned for the relief of forces because of the extent to which they were still in contact. For example, he had planned for the 1st Cav Div to replace the 1st AD, which had been in contact for over 18 hours, so that they could become more combat effective over time.⁷⁷ VII Corps also advanced its forces appropriately so that they would not overextend themselves to ensure their supportability.⁷⁸ The understanding of the capabilities of the combat forces with respect to logistics, the VII Corps logistical elements themselves, and proper command and control were essential to VII Corps

maintaining operationally durable formations. This understanding of capabilities also enabled LTG Franks to send his forces into the fight for 18 continuous hours when he required it. This is very critical to future operations. Future capabilities will be even more lethal and complicated; logistical requirements will become even more encumbering; operations will be conducted over wider expanses; commanders will have to manage assets as VII Corps did to be able to operate at faster optempos over longer periods of time. Commanders must find ways to monitor the heartbeat of their units as LTG Franks did through communications, his experience, and knowledge of capabilities.

For the Iraqis to be considered a distributed enemy they must also be operationally minded. They must be similarly trained, armed, equipped, structured, and commanded as the coalition forces. Most importantly, the enemy must fight symmetrically. The Iraqis easily meet the criteria of being similarly armed, equipped, structured, and commanded. Although their equipment, training, and professionalism does not compare to the United States, they had the 4th largest army in the world and were principally equipped and trained by the Soviet Union.⁷⁹

The other criterion is that of command. The Iraqis fought through a command system much like the Soviets. The orders came from higher and were to be strictly followed. Their training did not allow for much initiative at the lower levels.⁸⁰ On the other hand, the United States forces display initiative at all levels. The United States does not train its soldiers to blindly execute a programmed sequence of events. Instead, American forces are expected to understand the mission and the commander's intent and be able to react to any situation for the good of the mission and accomplishment of the overall objective.⁸¹

Most importantly, the Iraqis and the coalition forces fought a symmetrical war at a mid-high intensity level. Neither side fought using nuclear weapons nor based their strategy upon guerrilla activities, terrorists, or MOOTW (Military Operations Other Than War).

The Iraqis were also operationally minded. In war, operational art determines when, where, and for what purpose major forces will fight over time. Saddam kept forces in primarily three areas: oriented on the Iran border, toward coalition forces, and forces at home to quell civil

acts of aggression against the government.⁸² He sent an overwhelming number of forces to seize Kuwait. He used diplomacy, the press, and his allies to help him buy time to keep the coalition forces from attacking his army and thereby losing his prize - Kuwait. He kept forces in depth and ordered a withdrawal when he saw that his forces may could get entirely destroyed by being encircled in Kuwait. This all points to the fact that Iraq fought with an understanding that a sequence of battles or operations must be linked to achieve an overall higher objective. He also wanted to preserve his forces before they were all destroyed so that they could be used in the future for achieving another objective.

In sum, the Iraqi army was definitely a distributed enemy. No, they were not as lethal, professional, or quite as good as the United States and coalition forces as a whole. Nonetheless, the Iraqi army was similarly trained, equipped, operationally minded and a symmetrically opposing force. In the future, as the United States realizes that it has the most powerful army in the world, it must also know its enemy to succeed. The US leadership focused the physical aspect of war based upon simulations and wargames of a Soviet-based army.⁸³ As a result the outcome was very different to what was expected. VII Corps showed that the moral aspects of war must also be taken into account.

Distributed deployment is using all assets available toward the accomplishment of the objective. Countries orient politics, economy, create an industrial base, develop technology, orient the people, train and develop the armed services, as well as enlist allies toward the war effort. Because of the magnitude of efforts nations employ to fight a war, those same efforts must be neutralized to win the war. The US used diplomatic, political, and economic approaches to neutralize Iraq's strategic capabilities. The United States reduced the potential for other countries to become involved. It also employed economic and political sanctions to reduce Saddam Hussein's long term capabilities. US military forces focused their efforts toward Iraqi key resources and industrial capabilities to help enable a victory.⁸⁴ VII Corps' role in distributed deployment was focused primarily on the enemy's ground forces. VII Corps' mission was to neutralize the Iraqi Republican Guard Forces in Kuwait and encircle enemy forces in Kuwait.

Simultaneously, VII Corps was protecting its own key resource areas - logistics and personnel. The VII Corps Commander, LTG Franks, believed that the best way of accomplishing his mission and achieving his objectives with the fewest casualties was to attack by massing three divisions screened by the cavalry in front. This approach afforded his units the best protection possible and secured corps lines of communication. VII Corps also used coalition forces to conduct its operations - principally the 1st AD (British), but it included other forces as well. Coalition forces must be used in acceptable political means and integrated into combat operations. Future warfare and conflicts will involve an increased use of combined forces on the battlefield. Such forces require many political and tactical considerations which must be addressed for the forces to be adequately utilized on the future battlefield. The next generation of operational artists must not only know the enemy but also understand the nuances, difficulties, political, and cultural idiosyncrasies of his own friendly forces to succeed.

VII Corps moved over 300 km from their initial attack positions to Basrah in 100 hours.⁸⁵ Having continuous logistics was essential to the conduct of VII Corps operations. As General Ulysses S. Grant mentioned, "If action depends on movement, movement depends on supply."⁸⁶ The tempo of VII Corps was very high. Each tank must be refueled approximately every 8-10 hours.⁸⁷ That meant each tank in the Corps had to be refueled between 10 and 12 times during the 100-hour war. Fuel and ammunition was so critical that it had to be air dropped to the 2d ACR on 26 Feb. The 2d ACR remained in a red fuel status after 26 Feb for the remainder of the war. Additionally, 3d AD provided fuel to the 1st AD on 26 Feb so that the 1st AD could continue to advance. Initially, Third Army's deep Apache operations were constrained by availability of fuel as well.⁸⁸ LTG Franks considered the effect of logistics on the evening of 24 February. He did not want his logistical support vehicles to become mired in the obstacle belt in extremely poor weather compounded by executing the movement in the dark. LTG Franks thought not only of the physical environmental conditions but also of the level of training of his force. Although two of his divisions were well trained and had recently completed a rotation at the NTC, he had another division which had not been as well trained. Additionally, he did not know the true

readiness level of his coalition attachments. His corps would be vulnerable to enemy attacks without adequate fuel and could potentially become sitting ducks.⁸⁹ The determination and resourcefulness of the commanders and their staffs were essential to the success of VII Corps. Logistics cannot be conducted at just the appropriate times. It must be a continuous activity. Had it not been for its continuous logistics support, VII Corps would not have been as successful as it had been. Every piece of equipment, and every soldier, on the modern battlefield depends on logistics. Continuous logistics is instrumental to success. It must be focused on in every step of the plan, and operations must be suited to fit logistical requirements. Had the 2d ACR or the 1st AD not been able to refuel, almost half of VII Corps forces would have been stopped without a single enemy bullet being fired.

Operational art is characterized by the integration of several simultaneous and successive distributed operations in a distributed campaign. VII Corps had exceeded Triandafillov's thoughts for conducting successive military operations to depths of 150-200km to produce victory since LTG Franks led his corps over 300km. VII Corps nearly followed Tukhachevsky's three step approach to a "T." By attacking the enemy forces in depth with aviation, tactical air, battlefield air interdiction, and artillery; the Iraqis were neutralized in depth. VII Corps attacked with a "shock army" of armor and mechanized infantry supported by artillery and attacked the Iraqis at their weakest point. VII Corps kept deep assets focused on forces on the main axis of attack and penetrated with its shock army into a breakthrough that contributed to dislocating the entire Iraqi army in Kuwait. VII Corps provided elements of change by attacking even deeper than what had been expected previously. Future operations will become even more mobile and require more maneuver space. VII Corps showed that operations must be conducted successively, quickly, and over more terrain. Future thought must look outside the doctrinal box to be successful.

Chapter 6 - Conclusion

This monograph has used Dr. James Schneider's characteristics of operational art to examine the degree to which VII Corps contributed to the evolution of operational art during Operation Desert Storm. By reviewing the strategic setting of the Gulf War and VII Corps operations as a foundation of information we have noted several conclusions.

Looking first at distributed operations, VII Corps success in Desert Storm is attributed to employing all assets across the battlefield toward one objective. As operations continue to evolve over time, operations will be conducted over wider areas and units will be employed even further apart. More types of equipment, units, and assets will be employed during an operation. VII Corps execution of its operations show that each specific asset must be oriented toward a common objective to be successful. This becomes even more critical over time when the many different components may not support that common objective.

Setting our sites on instantaneous command and control, VII Corps operations illustrated how much more important communications and command and control will become for future operational artists. Key decisions can be made instantly at the highest level of command. Incidents at the lowest levels may have strategic consequences. Instantaneous communications and command and control can help alleviate those moments of indecision if the situation is made known to the appropriate level of command. The National Command Authority had the VII Corps situation and locations in almost complete accuracy in real time. By being aware of the current situation on the other side of the globe with almost no time delay, national-level and high-level decisions could be made nearly instantaneously enabling lower level units' optempo to remain high. The emphasis on C2 will increase dramatically for future operational art development and execution issues.

LTG Franks operational vision enabled VII Corps to remain focused on how operations must proceed to become successful. The evolution of operational vision has shown that the risks are still present during execution but the complexity of operations coupled with the

increased optempo makes it more difficult to stay focused on the larger theater strategic picture. It becomes easy to get sidetracked on the increased multitude of meaningless information and details. LTG Franks plainly showed that the commander must maintain an operational vision to be successful.

Operationally durable formations have become increasingly more difficult to maintain. VII Corps operations provide evidence that there were many different elements on a much larger and faster battlefield that can significantly influence the outcome of not only one operation but successive operations. Those elements must be logically supported, synchronized, and instantaneously controlled.

Desert Storm enabled the United States to fight a distributed enemy as well. What is not new is that we must know our opponent. However, the coalition forces focused almost entirely on the physical aspect of war by looking at type and size of forces, chemical and nuclear munitions capabilities, and neglected the moral aspect. The United States emphasis on operational art must change toward a more complete look at the actions of future enemies.

Distributed deployment is using all assets available toward the accomplishment of the objective. More and more conflicts will involve the use of combined forces. To be able to ally oneself with those forces in the future, the United States must ensure that each nation has a favorable role in the war. Operational art will increasingly require knowing the political consequences of each country and potentially even sacrifice a more decisive outcome to ensure a nation's army is adequately represented in an operation.

As aforementioned, logistics is paramount to being successful in future operations which will be swifter and over greater expanses of terrain. VII Corps role in Desert Storm provided important insights in that regard. Fuel was especially critical and operations were guided by logistical concerns. As armies go to more and different types of equipment, logistics takes on an even more critical role for future operational planning.

Future perceptions of operational art will include a more mobile force with a capability to maneuver further. More maneuver space will be required, not only in depth, but also width for

operations to be successful. Furthermore, strikes will have to be quicker so that the enemy cannot adequately react. VII Corps showed that future operational planning must be conducted successively, more quickly, and over more terrain.

Changes and insights into operational planning will always be required. However, it is the thought process that the planner and fighter uses that will make them successful. One person cannot feasibly be able to incorporate the continuing evolution of operational art in the short amount of time needed. It will depend on the synergy of amassing the abilities of the entire staff to plan and execute future operations so that they can be successful. Future operations will depend on more than one person doing his job competently. The commander must ensure that each knows what is expected and he understands what the ultimate outcome should be.

ENDNOTES

1. White House, *National Security Strategy*, (Washington DC: US Government Printing Office, 1995), i. The term "Western interests" bases its conclusions upon the impact of Iraqi control of such large quantities of the world's oil reserves upon the United States national security. This would mean a similar impact would also be felt across other Western countries.

Colin M. Powell with Joseph E. Persico, *My American Journey*, (New York, New York: Random House, 1995), 463. Bill Webster, the CIA director in 1990, provided a picture of Iraq's presence in Kuwait becoming the preeminent figure in the Persian Gulf. Followed by Secretary of State, Dick Cheney stating, "We have the potential here for a major conflict."

2. Michael R. Gordon and General Bernard E. Trainor, *The Generals' War*, (Canada: Little, Brown & Company Limited, 1995), 430. CIA report showed the following:

	<u>Tanks</u>	<u>APCs & other armor eqpmt</u>	<u>Artillery</u>
Prewar equipment in KTO:	2,655	2,624	889
Surviving equipment:	842	1,412	279
% destroyed:	79%	48%	68%

3. James Blackwell, *Thunder in the Desert*, (New York, New York: Bantam Books, October 1991), 169-170.

4. Richard M. Swain, "Lucky War" Third Army in Desert Storm, (Fort Leavenworth, KS: U.S. Army Command and General Staff College Press, 1994), 106. The ratio of opposition to friendly forces is considered Jominian. On a briefing slide shown by Third Army: If 50% of the enemy was attrited by the air campaign, the following friendly to enemy ratios would occur: VII Corps would have an 11.5:1 advantage at the breach site; 3.8:1 enroute to the Republican Guard, and 2:1 at the decisive point.

5. James J. Schneider, *Vulcan's Anvil: The American Civil War and the Emergence of Operational Art*, (Fort Leavenworth, KS: U.S. Army Command and General Staff College Press, 16 June 1991), 30-67.

6. General H. Norman Schwarzkopf, "CENTCOM News Briefing" (Riyadh, Saudi Arabia, February 27, 1991), 10.

7. Aleksandr A. Svechin, *Strategy*, (Minneapolis, Minnesota: East View Publications, 1992), 68-70. Jacob W. Kipp who writes one of the introduction to Svechin's book also links Svechin's definition of operational art to Desert Storm. He states that "operational art" can be linked in terms of the very nature of the coalition's campaign, its limited political objectives and the strict congruence between these objectives and the military means chosen, the initial defensive posture, economic sanctions, the gradual buildup of forces in theater, the subsequent initial air campaign aimed at the attrition of Iraqi military potential, and, finally, the decisive blow aimed at achieving the destruction of the enemy forces in theater and the termination of the war with limited political gains, and the liberation of Kuwait.

8. US Army, *FM 100-5 Operations*, (Washington, DC: US Government Printing Office, 14 June 1993), glossary-6. James J. Schneider, *Theoretical Paper No. 3, The Theory of Operational Art*, (Fort Leavenworth, KS: U.S. Army Command and General Staff College Press, 1 March 1988), 2. Both Dr. James Schneider and FM 100-5 define operational art as the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization, and conduct of campaigns and major operations.

9. US Army, *FM 100-5 Operations*, (Washington, DC: US Government Printing Office, 14 June 1993), 6-2 to 6-3.

10. James J. Schneider, *Theoretical Paper No. 3, Theory of Operational Art*, 14.
11. Svechin, 38.
12. Mikhail Tukhachevskiy, *New Problems in Warfare*, (Fort Leavenworth, KS: U.S. Army Command and General Staff College Press), 59-60.
13. James J. Schneider, *Vulcan's Anvil: The American Civil War and the Emergence of Operational Art*, 30-67.
14. Ibid, 38.
15. US Army, *FM 101-5-1 Operations*, (Washington, DC: US Government Printing Office, 21 October 1985), 1-44. The movement of forces supported by fire to achieve a position of advantage from which to destroy or threaten destruction of the enemy. A principle of war.
16. David G. Chandler, *The Campaigns of Napoleon*, (New York: MacMillan and Co., 1966), 161.
17. Clausewitz, *On War*, (Princeton, New Jersey: Princeton University Press, 1984), 590, 606. Clausewitz writes that policy will determine the character of war. Policy is influential in the planning of war and that nothing is more important in life than finding the right standpoint for adhering to those points. Governments and nations must know their own capabilities to wage war. Svechin, 191.
18. V.K. Triandafilov, *The Nature of the Operations of Modern Armies*, (Portland, Oregon: Frank Cass & Co. Ltd., 1994), 109, 127-138. Triandafilov describes the requirements of success for successive operations. Schneider, *Vulcan's Anvil: The American Civil War and the Emergence of Operational Art*, 40-41. Dr. Schneider describes characteristics of distributed operations.
19. Mikhail Tukhachevskiy, 17-22.
20. Martin Van Creveld, *Supplying War, Logistics from Wallenstein to Patton*, (Cambridge: Cambridge University Press, 1977), 1. Van Creveld references Jomini, "the practical art of moving armies under which he also includes "providing for the successive arrival of convoys of supplies" and "establishing and organizing...lines of supplies." Van Creveld arrives at "the practical art of moving armies and keeping them supplied."
21. Schneider, *Vulcan's Anvil: The American Civil War and the Emergence of Operational Art*, 45-52.
22. V.K. Triandafilov, 146-147.
23. US Army, *FM 63-3, Corps Support Command*, (Washington, DC: US Government Printing Office, 30 September 1993), 1-1.
24. US Army, *FM 100-5*, glossary-1.
25. Schneider, *Vulcan's Anvil: The American Civil War and the Emergence of Operational Art*, 52-55.
26. Ibid., 55-58.

27. Ibid, 58-61.

28. US Army, FM 100-5, 6-2 to 6-3.

29. Schneider, *Vulcan's Anvil: The American Civil War and the Emergence of Operational Art*, 61-63.

30. Ibid, 63-64.

31. U.S. Army School of Advanced Military Studies, *Foundation of Military Theory*, (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College Press, 25 May 1997), glossary-33. The text quotes the 1986 definition of strategy from FM 100-5. I chose this definition because the remarks from the 1993 version of 100-5 was lousy (from page 1-3): Strategic perspectives are worldwide and long-range. Strategy is concerned with national or, in specific cases, alliance or coalition objectives. The 1993 version constantly talks to the term of strategic but never really defines the term.

32. President of the United States, National Security Strategy for Engagement and Enlargement 1996, (Washington DC: US Government Printing Office, 1996), i-ii.

33. Colin M. Powell with Joseph E. Persico, *My American Journey*, (New York, New York: Random House, 1995), 460. Saddam had charged that Kuwait had siphoned off \$2.5 billion in oil from the Rumaila oil fields, which the two countries shared. Saddam eyed two Kuwaiti-held islands, Warba and Bibyan, which blocked his access to the Gulf. The Kuwaitis were not Arab brothers, but "greedy lapdogs" of the West.

U.S. News & World Report, *Triumph Without Victory*, (Toronto, Canada: Times Books Random House, 1992), 20-21. American intelligence officials estimated that the eight-year war with Iran had cost Iraq something on the order of \$500 billion. Despite its vast oil revenues, Iraq had been left with a debt of some \$80 billion, roughly 150% of its annual gross national product (America's own troublesome budget deficit at the time amounted to just over 5% of its GNP). Of the \$80 billion Iraq owed, about \$30 billion was due in short term notes in Europe, the United States, and Japan. There was no way Saddam could pay it out of his own pocket.

The Iraqi leader knew this. And so, in his speech (July 17, 1990), he blamed deflated oil prices, and specifically those members of the Organization of Petroleum Exporting Countries (OPEC) who exceeded their production quotas. Artificially low oil prices, Saddam said, were a "poisoned dagger" thrust into Iraq's back. The hands gripping the dagger were the United Arab Emirates (UAE) and the Sabah family in Kuwait.

U.S. News & World Report, *Triumph Without Victory*, (Toronto, Canada: Times Books Random House, 1992), 15-16. February 1990, Saddam Hussein flew from Baghdad to Amman. The occasion was the first anniversary of the Gulf Cooperation Council, a regional common market comprised of among others, Egypt, Iraq, Jordan, and North Yemen. Jordan's King Hussein had laid on a lavish welcome. The gathering broke up a day earlier than expected. Aides and advisers mentioned that Iraqi leader's strident address to the council as the reason for their premature departure. In the world according to Saddam, the unraveling of communism in Eastern Europe and Mikhail Gorbachev's desperate plight in Moscow meant that the world was suddenly left with a single superpower. Saddam's explanation surprised his fellow Arab leaders. The United States, Saddam said, "with its known capitalist approach and its imperialist policy....will continue to depart from the restrictions that govern the rest of the world." With the retreat of their Soviet protector, Arabs would be in greater jeopardy than ever; Israel could be expected to embark on "new stupidities." Moreover, "the country that will have the greatest influence in the region through the Arabian Gulf and its oil will maintain its superiority as a super power without an equal to compete with. This means that if the Gulf people, along with all Arabs, are not careful, the Arabian Gulf will be governed by US will. If the Arabs are not alerted and the

weakness persists, the situation could develop to the extent desired by the US; that is, it would fix the amount of oil and gas produced in each country and sold to this or that country in the world."

It seemed that there were many indicators of an invasion into Kuwait.

34. Bob Woodward, *The Commanders*, (New York, New York: Simon & Schuster, 1991), 239. It seemed that Saddam had played his cards quite well prior to the invasion in Kuwait. Saddam had gotten American assurances that he would not be attacked. America was trying to stay out of Arab affairs at the time. On 25 July, due to Saddam Hussein's prodding, April Glaspie met with him. As a result of the meeting April Glaspie had told Saddam, "But we have no opinion on the Arab-Arab conflicts like your border disagreement with Kuwait. I have direct instruction from the President to seek better relations with Iraq." Israel had done the same thing. This enabled Iraq to virtually eliminate any cause for US intervention and leave his Western (Israeli flank) flank open during the invasion.

Gordon and Trainor, 22. This was the first time Saddam had ever summoned an ambassador.

U.S. News and World Reports, *Triumph Without Victory*, (New York: Random House, Inc., 1992), 14. In October 1989, President Bush signed a presidential directive to pursue "normal relations" with Baghdad. Then on 17 January 1990, Bush had reaffirmed the administrations desire to seek expanded trade with Iraq, as well as more guarantees from the U.S. Export-Import Bank which would also help improve relations with Baghdad.

U.S. News and World Reports, 24-25. Also on 25 July 1991, Saddam had mentioned to April Glaspie that the Iraqis were ready to fight any foe over a matter of honor, regardless of the cost and America's inability to accept "10,000 dead in one battle." Saddam may have been thinking of Vietnam or even more recently, U.S. involvement with the Lebanon crisis involving the Marines.

From the book by Michael R. Gordon and General Bernard E. Trainor, 16, just before moving their forces to the Kuwaiti border, Iraq had ordered satellite photos of Kuwait and northern Saudi Arabia from SPOT, the French commercial satellite reconnaissance service. The photos had been provided with no questions asked. The Americans did not find this out until after the Iraqi invasion into Kuwait took place. On page 26: Most of Washington's Arab allies were not alarmed, either.

In spite of all this, which much of it was not readily apparent at the time:

Colin M. Powell with Joseph E. Persico, 460. Arab leaders kept telling the United States not to worry and that Arab brothers did not war against each other.

35. Department of Defense, "Capabilities for Limited Contingencies in the Persian Gulf," (Washington DC: US Government Printing Office, 1979), 7-9. This outlined Iraq's capabilities in the region. The study stated that the US must be able to defend the interests of Kuwait, Saudi Arabia, against an Iraqi invasion. The study went on to say that the US should intervene early in the crisis before hostilities began and while escalation might be avoided. Without forward deployments, the US could not get significant ground forces to the region for 1-20 days at best and force ratios would be worse than 2:1 for at least 25 days. The study went on but illustrated the very predicament the US was in.

Colin M. Powell with Joseph E. Persico, 306. Colin Powell had the CINC CENTCOM, General Norman Schwarzkopf to come up with a two tiered response. Tier one should provide for a range of retaliatory options "if Saddam commits a minor border infraction." but if his intentions turned out to be more ambitious, "I want to see a second-tier response, how we'd stop him and protect the region." General Schwarzkopf later told Secretary Cheney that he believed that the Iraqi's would only conduct a limited attack to seize the Kuwaiti part of the Rumaila oil field and Bubiyan Island - not the entire country of Kuwait and topple the ruling family.

36. U.S. News and World Reports, 416-418. Resolution 660; August 2, 1990. The Security Council, Alarmed by the invasion of Kuwait on 2 August 1990 by the military forces of

Iraq, Determining that there exists a breach of international peace and security as regards the Iraqi invasion of Kuwait, Acting under Articles 39 and 40 of the Charter of the United Nations,

1. Condemns the Iraqi invasion of Kuwait;
2. Demands that Iraq withdraw immediately and unconditionally all its forces to the positions in which they were located on 1 August 1990;
3. Calls upon Iraq and Kuwait to begin immediately intensive negotiations for the resolution of their differences and supports all efforts in this regard, and especially those of the League of Arab States;
4. Decides to meet again as necessary to consider further steps to ensure compliance with the present resolution.

Vote: 14 for, 0 against, 1 abstention (Yemen).

Resolution 661 on 6 August went just a bit further. Rather than write the entire resolution as I did of 660, I'll provide the highlights of the sanctions:

All UN states shall prevent:

1. The import into their territories of all commodities and products originating in Iraq or Kuwait exported therefrom after the date of the present resolution. This point was very encompassing but essentially the resolution was getting rid of any loopholes for anything from Kuwait or Iraq being sold or purchased.
2. All states shall not make available to the Government of Iraq or to any commercial, industrial or public utility undertaking in Iraq or Kuwait, any funds or any other financial or economic resources. (President Bush had frozen all Iraqi assets on 2 August - which was phenomenal considering previous trends and beaureaucratic red tape.)

the vote was: 13 for, 0 against, 2 abstentions (Cuba and Yemen)

Bob Woodward, 285. Later on 25 August, the United Nations Security Council voted to give the navies of the US and other countries the right to use force to stop trade with Iraq. It was the first time in the UN's 45 year history that individual countries outside an umbrella UN command were authorized to enforce an international blockade, an extraordinary diplomatic victory for the Bush administration.

37. Bob Woodward, 226. Colin M. Powell with Joseph E. Persico, 463. It was also fortunate that President George Bush was an "oil man" from Texas. He understood more than anyone within the NCA what the near monopoly of oil meant to the rest of the world.

US News & World Reports, 58. This knowledge helped him in quick talks with the President of Turkey to cut the oil pipeline from Iraq. If the Pipeline was not cut, any type of embargo would be quite useless. This would be especially difficult since Iraq owed Turkey over \$750 million and Iraq could repay Turkey with oil. George Bush had ties maintained ties with President Ozal, who quickly agreed based upon the UN Resolution. One must also remember that Turkey, a member of the UN, was also trying to improve its relations with the west. This was another political maneuver to gain recognition and favor with the European community. So this allowed Turkey to be seen as a team member by both the US and Europeans.

By reading that the Iraqi invasion of Kuwait affected U.S. National Security based upon economic reasons, this came to mind from Mikhail Tukhachevskiy, *New Problems in Warfare*, (Fort Leavenworth, KS: U.S. Army Command and General Staff College Press), 32. Tukhachevskiy stated that the cause of war is always economic and that capitalist countries wage war to acquire markets or natural resources. This happened to be the case for both the United States and Iraq. The United States went to war over natural resources which threatened its long term economic security and Iraq went to war to acquire markets.

38. Colin M. Powell with Joseph E. Persico, 464.

39. Gordon and Trainor, 48-52. Although this appears to provide an account of what occurred and where I initially got my information, Bob Woodward's book provides more insights in the initial misgivings of the Saudi's, especially King Fahd. There was much debate on who

should go (whether it should be Secretary of Defense - Dick Cheney) and who would be accepted. King Fahd initially wanted a low-level staff officer - the perception was that the King wanted someone he could easily tell no (that Saudi Arabia did not need troops on the ground, an air force would be fine) and that the Arabs can work out their own problems.

40. Colin M. Powell with Joseph E. Persico, 470. US News & World Reports, 67-69.

41. James Blackwell, Thunder in the Desert: the Strategy and Tactics of the Persian Gulf War, (New York, New York: Bantam Books, October 1991), 115-121. The actual plan for executing the air campaign for operation Desert Storm was worked out along the lines of Warden's theory (for more - see The Air Campaign: Planning for Combat published by COL John Warden in 1988) in a simulations called Checkmate. The air plan had four phases (only the first phase was developed and briefed to GEN Colin Powell, the remaining phases were developed at a later stage):

(1) concentrate on attacks on Iraq's vital centers of gravity with four goals in mind; a - Destroy Iraq's capability to mount any kind of air campaign of its own, offensive or defensive. b - - destroy and disrupt Iraq's national command, communications, and control structure by destroying the central telecommunications facility in Baghdad as well as TV, radio, and telephone transmission lines. c -- eliminate Iraq's nuclear, chemical, and biological weapons production and research infrastructure. d -- disrupt Iraq's military support and armaments production infrastructure by taking out the electrical power grid, factories, transportation network, and oil industry.

(2) Suppress the tactical air defenses in the Kuwaiti Theater of Operations (KTO) to give the allies uncontested access to the skies over Iraqi troops.

(3) Cut off the Iraqi army in the KTO from its source of supply and control in Iraq. Focus on roads and bridges closer to Kuwait and along the Euphrates-Tigris Valley which Iraq transported the supplies for its army in Kuwait.

(4) Work close with ground forces to destroy the remaining Iraqi army units in place and force them to withdraw from Kuwait.

42. Colin M. Powell with Joseph E. Persico, 476. Some examples of politics that had to be cleared up before military operations took place:

US needed clearance from Saudi Arabia have to enable US forces to land in their country.

Numerous political roadblocks were encountered:

- Prince Bandar warned Colin: "No bibles." Saudi customs official will have to confiscate the bibles," Bandar insisted. Colin said, "The Arabs will take our sons but not their Bibles." We worked out a deal whereby we flew the Bibles directly to our bases, while Saudi officials looked the other way.

- Bandar said that no religious services could be held on Arab soil for our Jewish troops. Colin, be reasonable, it will be reported on CNN, what will our people think? Colin: we found a practical solution. We planned to helicopter Jewish personnel out to American vessels in the Persian Gulf and hold Jewish services aboard ship. Crucifixes had to me worn under T-shirts.

- If any sexual hanky panky occurred between US and a Saudi, he would call and we would be allowed to whisk the American out of the country and take appropriate disciplinary action ourselves before Islamic law clicked in.

- US needed to ask Syria each time we wanted to fly into their airspace. This became a crucial issue and caused US pilots to become captured because it took the Syrians over three days to respond at one time. The US went ahead a sent a mission into Syrian airspace because it took so long and the Syrians, which didn't know the mission was sent, had authorized it while the mission was in the air.

- Gordon and Trainer, 291-292. Arabs would not fight alongside Israelis.

43. US News & World Reports, 413. The press was disorganized, anarchic by nature, and competitive among themselves, the news reporters assigned to cover Desert Storm were no

match for the machine of the US Central Command and the Pentagon. The mismatch was compounded by the fact that Saudi Arabia was openly hostile to the press. The press felt further in the public's esteem. Journalists poorly prepared to cover war, high technology, and international diplomacy were assigned to cover the conflict in the Gulf. Many embarrassed the profession. By contrast, briefers provided to the press by the military seemed professional, knowledgeable, and worthy of trust. The situation became so bad that "Saturday Night Live" aired a skit satirizing the performance of the press corps assigned to cover Desert Storm and lauding the military.

Colin M. Powell with Joseph E. Persico, 529-30. The press also had to watch themselves because the public would see them. When journalists were in action, shouting and sometimes asking unreasonable questions, even the best reporters came across as bad guys. Cheney, Schwarzkopf, and Powell, understood that they were talking not only to the press assembled in front of them; but to four other audiences—the American people, foreign nations, the enemy, and coalition troops. Saddam Hussein was constantly briefed of US news and CNN. During the gulf war, the JCS auditioned military spokespersons. In the 24 hour coverage of the TV world, the military could no longer put just anyone, no matter how well informed, in front of the cameras. Defense priority was fighting. But in this new media environment we had to learn something as old as Clausewitz: how to make the people understand and support what we were doing. Polls conducted after the war suggest that we succeeded. These surveys indicated that 80% of the Americans polled thought press coverage of the Gulf War had been good or excellent.

44. H. Norman Schwarzkopf, 323. Colin M. Powell with Joseph E. Persico, 490.

45. Gordon and Trainor, 153. Bob Woodward, 319. He also shows that the President, even as early as November, was realizing that the coalition was too fragile to hold out indefinitely. This would play a part later as to getting on with the ground war. Each of the nations must be able to see "the light at the end of the tunnel."

46. Colin M. Powell with Joseph E. Persico, 488. On 30 October, Powell briefed the NCA: the first phase of the mission is just about accomplished. We'll soon be in a position to defend Saudi Arabia. By early December the last division, the last company, the last tent pole will be in place. This is how we would go on the offensive to kick the Iraqis out of Kuwait. I described the air campaign, then the frontal supporting attacks into Kuwait to pin down the occupying Iraqi army while a sweeping left hook against the western flank would cut off the Iraqis from the rear. Scowcroft asked what size force are we talking about? We're approaching 250,000 for the defensive phase. But if the President opts for this offensive, we'll need a hell of a lot more. Nearly double. Bout another 200,000 troops. Cheney briefed all the Joint Chiefs were all on board for the offensive plan.

The president asked if Powell was sure air power couldn't do the it. Powell stated no. Jim Baker suggested 1 February as an ultimatum to Saddam to get out or be thrown out. We have to be ready to go to war. The President then stated: Okay, do it. We had a decision, we would go to war in three months if sanctions did not work and the Iraqis were still in Kuwait. Just after the midterm elections, on 8 November, President Bush announced that another 200,000 US troops were on their way to the Gulf and he made their mission unmistakable: "to insure that the coalition has an adequate offensive military option."

Gordon and Trainor, 47. On 4 August at Camp David, Schwarzkopf briefed the NCA that the Iraqis took Kuwait in four days not seven that was previously thought. The Iraqis could march on 24-48 hours notice. CENTCOM's ability to repulse Iraq depended on their ability to manage logistics and the killing power of American aircraft. It would take a minimum of a month to get a capable defense in place. The build up of necessary force to evict the Iraqis from Kuwait would take eight to ten months. Some of the president's men were taken aback by the estimate.

47. US News and World Reports, 429-430. UN Resolution 678 demands that Iraq comply fully with resolution 660 and all relevant resolutions, and decides, while maintaining all

its decisions, to allow Iraq one final opportunity to do so. The UN Resolution 678 authorized Member States cooperating with the Government of Kuwait, unless Iraq on or before 15 January 1991 fully implements, as set forth in paragraph 1 above the foregoing resolutions, to use all necessary means to uphold and implement resolution 660 and all subsequent relevant resolutions to restore international peace and security in the area. Requests all States to provide appropriate support for the actions undertaken in pursuance of paragraph 2.

48. Colin M. Powell with Joseph E. Persico, 490. U.S. News & World Report, *Triumph Without Victory*, (Toronto, Canada: Times Books Random House, 1992), 13-14, 395. Once Moscow's most important client in the region, Saddam had forged a de facto alliance with the West over the course of the 1980s. From the moment of Islamic fundamentalism's victory in neighboring Iran, Saddam Hussein and his secular Baath Party were seen as a counterweight to the radical Shiites in Tehran. Despite the fact that Iraq harbored and financed some of the world's most deadly terrorist organizations, and despite its own public policies, in 1983 the Reagan administration took Baghdad off its list of state sponsors of terrorism. In the following years, diplomatic ties were restored. Shortly after that, hundreds of millions of dollars in US subsidies for big grain purchases were approved. Iraq would soon become the largest importer of American rice and the fifth biggest importer of American wheat.

In October 1989, President George Bush signed a presidential directive outlining US policy toward Iraq. Despite concern about Saddam's continued human-rights abuses among his own people, Washington intended to pursue "normal relations" with Baghdad. Quiet diplomacy was though to be the best way to achieve stability in the volatile, oil-rich Gulf. On January 17, 1990, Bush reaffirmed the administration's desire to seek expanded trade with Iraq, as well as more guarantees from the US Export Import Bank which would also improve relations with Baghdad. Secretary of State James A Baker III also urged more credits for Iraq. Saddam was to be encouraged that he had a friend in Washington.

49. Bob Woodward, 366. The National Security Directive (NSD) authorized the execution of Operation Desert Storm provided that (1) there was no last-minute diplomatic breakthrough, and (2) Congress had been properly notified. The document laid out the administration's case for launching the offensive soon after the deadline. It stated that it was the policy of the US to get Iraq to leave Kuwait; all peaceful means, including diplomacy, economic sanctions and a dozen UN resolutions, had failed to persuade Iraq to withdraw. It also directed that civilian casualties and damage to Iraq should be minimized consistent with protecting friendly forces, and the Islamic holy places should be protected.

50. Michael R. Gordon and Bernard E. Trainor, 228-240.

51. US News and World Reports, 279-280. Gordon and Trainor, 332-335.

52. Colin M. Powell with Joseph E. Persico, 519-520.

53. Schwarzkopf, 467-471.

54. US News and World Reports, 397.

55. Colin M. Powell with Joseph E. Persico, 527.

56. Swain, 324-343.

57. Ibid, 78.

58. Ibid, 103-108

59. Schwarzkopf, 433-434.
60. Swain, 114.
61. Ibid, 117-118
62. US News and World Reports, 270-271.
63. Michael R. Gordon and Bernard E. Trainor, 303-308.
64. Swain, 232-234.
65. Ibid, 244-245.
66. Ibid, 252-260.
67. Colin M. Powell with Joseph E. Persico, 522.
68. Swain, 157-159.
69. Ibid, 234.
70. Bob Woodward, 237, 282, 331. On 3 August 1990, Scowcroft stated that there had to be two tracks. First the US had to be willing to use force to stop this and that it had to make that clear to the world. Second, he said that Saddam had to be toppled. That had to be done covertly through the CIA, and be unclear to the world.
Bush ordered the CIA to begin planning for a covert operation that would destabilize the regime and he hoped, remove Saddam from power. He wanted an all-fronts effort to strangle the Iraqi economy, support anti-Saddam resistance groups inside or outside Iraq, and look for alternative leaders in the military or anywhere in Iraqi society. He knew that covert action would be difficult if not impossible given that Saddam ran a police state and brutally repressed any dissent or opposition. Still, he wanted to see what could be done. If ever there was a case for covert action undertaken in the national interest, he said, this was it. By 16 August, Bush signed an authorization for the CIA to begin covert actions to overthrow Saddam. The CIA was not to violate the ban on involvement in assassination attempts, but rather recruit Iraqi dissidents to remove Saddam from power.
Saddam's military might, especially his eight Republican Guard Divisions, were targeted to reduce his capabilities after the war.
Swain, 83-86. Gordon and Trainor, 84.
71. H. Norman Schwarzkopf, 513. Although not all the blame can be placed upon VII Corps. CENTCOM also knew that the enemy was in stages of withdrawal. CENTCOM also realized that VII Corps was still many hours from even getting close to plugging the route from Kuwait City to Basrah. CENTCOM had many assets that could have helped plug the gap or slow the tide of vehicles escaping from the envelopment of coalition forces such as Apache helicopters, additional air force air craft, ATACMS, and the commitment of the 1st Cavalry Division theater reserve, etc.
72. Swain, 245-247.
73. Ibid.
74. US News and World Reports, 396-397. Schwarzkopf, 468-471. Gordon and Trainor, 352-353.

75. Swain, 235-238.
76. Ibid, 252-254.
77. Ibid, 265.
78. Ibid, 108-118.
79. Bob Woodward, 248-249. Gordon and Trainor, 10-11.
80. James Blackwell, 21. Gordon and Trainor, 185.
81. FM 100-5, 2-6 to 2-7. Gordon and Trainor, 164.
82. Colin M. Powell with Joseph E. Persico, 484.
83. Swain, 104. The simulations being referred to is Army's BCTP and Air Force's think tank - Checkmate. The Army's CTCs are also based upon the Soviet threat which has been the "worst case" to fight against. This does tend to provide an environment to neglect other options that may occur when fighting less capable enemies. I do agree with fighting the worst case threat though.
84. US News and World Report, 410-411. At the end of the war, only 15% of Iraq's electricity delivered grid remained. That can be compared to only 15% of Germany's being knocked out in WWII. Other facilities have been destroyed which include factories, munitions, water, chemical, storage sites, weapons labs, equipment, etc.
85. Swain, 158, 159. This was determined by taking their starting locations and measuring the distance they had traveled to the end of the ground war.
87. U.S. Army, Student Text 100-3, Battle Book (Fort Leavenworth, KS: U.S. Army Command & General Staff College, 1 June 1996), 2-15. Also, LTC (P) Chris Baggot, Armor Branch, instructor School of Advanced Military Studies, states that 10 hours is a good planning factor to refuel armor vehicles.
88. Swain, 260-263.
89. Ibid, 235-238.

BIBLIOGRAPHY

Books:

Atkinson, Rick. *Crusade: The Untold Story of the Persian Gulf War*. Boston: Houghton Mifflin, 1993.

Blackwell, James. *Thunder in the Desert: the strategy and tactics of the Persian Gulf War*. New York: Bantam Books, 1991.

Clausewitz. *On War*. Princeton, NJ.: Princeton University Press, 1976.

De la Billiere, Peter. *Storm Command*. London: Harper Collins, 1992.

Dubik, James M. and Sullivan, Gordon R. *Envisioning Future Warfare*. Fort Leavenworth, Kansas: US Army Command and General Staff College Press, 1995.

Dubik, James. COL. *Creating Combat Power for the 21st Century*. Arlington VA: Institute of Land Warfare, Association of the United States Army, 1996.

Dunnigan, James F. and Bay, Austin. *From Shield to Storm*. New York: William Morrow, 1992.

Earle Edward Mead. *Makers of Modern Strategy, Military Thought from Machiavelli to Hitler*. Princeton, NJ: Princeton University Press, 1973.

Freedman, Lawrence and Karsh, Efraim. *The Gulf Conflict 1990-1991: Diplomacy and War in the New World Order*. Princeton, NJ: Princeton University Press, 1991.

Gordon, Michael, R. and Trainor, Bernard E. General. *The Generals' War*. Boston: Little, Brown, and Company, 1995.

Grant, Ulysses S. *Personal Memoirs of U.S. Grant*. New York: The World Publishing Company, 1952.

Marshall, SLA. *Men Against Fire, The Problem of Battle Command in Future War*. Gloucester, Mass.: Peter Smith, 1978.

Morris, William. *The American Heritage Dictionary of the English Language*. Boston, MA: Houghton Mifflin Company, 1979.

Office of the Secretary of Defense. *The Conduct of the Persian Gulf War, Final Report to Congress Pursuant to Title V of the Persian Gulf Conflict Supplemental Authorization and Personnel Benefits Act of 1991 (Public Law 102-25)*. Washington DC: US Government Printing Office, 1993.

Pagonis, William and Cruikshank, Jeffrey L. *Moving Mountains*. Boston: Harvard Business School Press, 1992.

Powell, Colin with Persico, Joseph E. *My American Journey*. New York: Random House, 1995.

Record, Jeffrey. *Hollow Victory: A Contrary View of the Gulf War*. Washington D.C.: Brasseys, 1993.

Savkin, V. Ye., *The Basic Principles of Operational Art and Tactics*, Washington, DC: Government Printing Office, 1982.

Scales, Bob. *Certain Victory*. Washington, DC: Office of the Chief of Staff, US Army, 1993.

Schwarzkopf, Norman. *It Doesn't Take a Hero*. New York: Linda Grey, Bantam, 1992.

Summers, Harry COL. *On Strategy II: A Critical Analysis of the Gulf War*. New York: Dell Paperback, 1992.

Svechin, Aleksandr Andreevich. *Strategy*. Minneapolis, MN: East View Publications, 1992.

Swain, Richard M. *"Lucky War" Third Army in Desert Storm*. Fort Leavenworth Kansas: US Army Command and General Staff College Press, 1994.

Triandafilov, V.K. *The Nature of the Operations of Modern Armies*, Newbury Park, Ilford, U.K.: Frank Cass, 1994.

US News and World Reports. *Triumph Without Victory: The Unreputed History of the Persian Gulf War*. New York: Random House-Times Books, 1992.

Van Creveld, Martin. *Supplying War, Logistics from Wallenstein to Patton*. New York: Cambridge University Press, 1977.

Warden, John A. *The Air Campaign, Planning for Combat*. Washington DC: National Defense University Press, 1988.

Woodward, Bob. *The Commanders*. New York: Simon & Schuster, 1991.

Military Publications:

Epstein, Robert M. *Napoleon's Last Victory: 1809 and the Emergence of Modern War*. Fort Leavenworth, KS: US Army Command and General Staff College Press, 2 November 1992.

Matheny, Michael R. *The Development of the Theory and Doctrine of Operational Art in the American Army, 1920-1940*. Fort Leavenworth, KS: US Army Command and General Staff College Press, 22 March 1988.

Schneider, James J. *Theoretical paper No.3, The Theory of Operational Art*. Fort Leavenworth, KS: US Army Command and General Staff College Press, 1 March 1988.

Schneider, James J. *Theoretical paper No.4, Vulcan's Anvil: The American Civil War and the Emergence of Operational Art*. Fort Leavenworth, KS: US Army Command and General Staff College Press, 16 June 1991.

Swain, Richard M. Dr. *Filling the Void: The Operational Art and the US Army*. Fort Leavenworth, KS: School of Advanced Military Studies, US Army CGSC.

Swan, Robin P. *The Pieces of a Military Chessboard - What is the Contemporary Significance of Jomini's Design of a Theater of Operations?*, Fort Leavenworth KS: School of Advanced Military Studies, 8 May 1991.

Tukhachevskiy, Mikhail. *New Problems in Warfare from Art of War Colloquium*. Fort Leavenworth, KS: US Army Command and General Staff College, 1 November 1983.

US Army. DA Pamphlet, *America's Army of the 21st Century*. Washington, DC: US Government Printing Office, 1995.

US Army. FM 63-3, *Corps Support Command*. Washington: US Government Printing Office, 30 September 1993.

US Army. FM 90-21, *Multi-Service Procedures for Joint Air Attack Team Operations*. Washington, DC: US Government Printing Office, 1991.

US Army. FM100-5, *Operations*. Washington: US Government Printing Office, May 1986.

US Army. FM100-5, *Operations*. Washington: US Government Printing Office, June 1993.

US Army. FM 100-26, *The Air-Ground Operations System*. Washington DC: US Government Printing Office, 30 March 1973.

US Army. FM 101-5-1, *Operational Terms and Symbols*. Washington: US Government Printing Office, October 1985.

US Army. *Force XXI Campaign Plan*. Washington DC: Office of the Chief of Staff Army, September 1993.

US Army. SAMS Course Syllabus, *Foundations of Military Theory*. Fort Leavenworth, Kansas: US Army Command & General Staff College Press, 25 May 1997.

US Army. Student Text 100-3, *Battle Book*. Fort Leavenworth, Kansas: US Army Command & General Staff College Press, 1 July 1997.

US Army. Student Text 100-3, *Battle Book*. Fort Leavenworth, Kansas: US Army Command & General Staff College Press, 1 June 1996.

US Army. TRADOC PAM 525-100-1, *Leadership and Command on the Battlefield, Operations Just Cause and Desert Storm*. Fort Monroe, VA: US Government Printing Office, 1992.

US Army. TRADOC PAM 525-5, *Force XXI Operations*. Fort Monroe, Virginia: Training and Doctrine Command, 1 August 1994.

US Army. *America's Army of the 21st Century, Force XXI, Meeting the 21st Century Challenge*. Office of the Chief of Staff, Army. Washington, DC: U.S. Government Printing Office, January 1995.

Articles:

Cate, Paul E. "Large Unit Operational Doctrine," *Military Review*, LVIII, No 12, December, 1978.

D'Amura, Ronald M. "Campaigns: The Essence of Operational Warfare," *Parameters: Journal of the U.S. Army War College*, Vol XVII, Summer 1987: 42-51.

Hall, George M. "Culminating Points," *Military Review*, July 1989: 79-86.

Izzo, Lawrence L. "The Center of Gravity is not an Achilles Heel," *Military Review*, January 1988: 72-78

Saint, Crosbie E. General. "A CINC's View of Operational Art," *Military Review*, September 1990: 65-78

Schneider, James J., "The Loose Marble -- and the Origins of Operational Art," *Parameters*, March 1989.